National Adaptation Plan
-Japan's case-

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Training Programme on Climate Change for Bhutanese Policymakers

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Contents

1. Observed & Future Climate Change in Japan
2. National Adaptation Plan
3. Promoting Adaptation in Local Governments
4. International Cooperation

Contents

1. **Observed & Future Climate Change in Japan**
2. National Adaptation Plan
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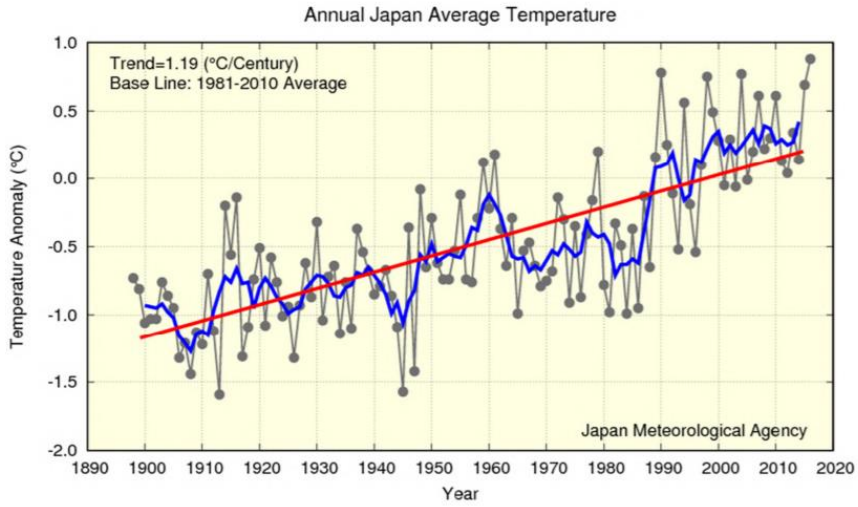
Observed climate change in Japan (temperature)

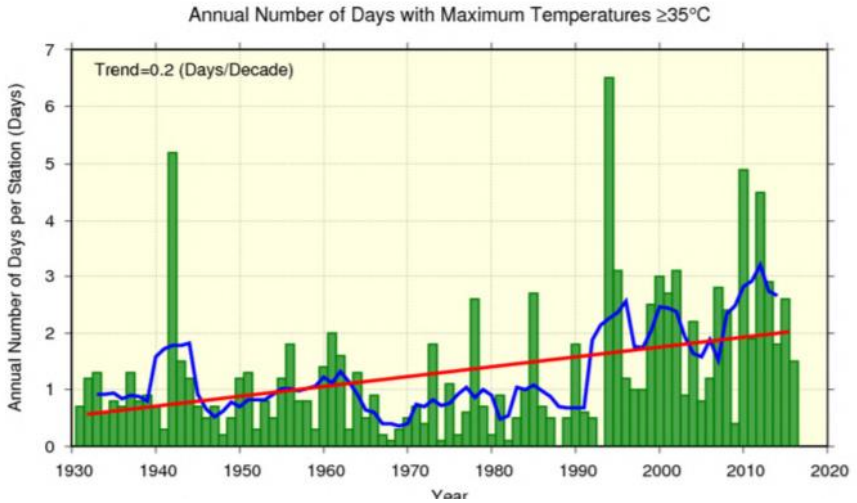
Annual mean temperature

- The mean surface temperature in Japan for 2016 is estimated to have been 0.88°C above the 1981 – 2010 average, which is the highest since 1898

Annual number of days with extremely high temperatures

- The annual number of days with maximum temperatures ≥ 35°C is virtually certain to have increased.





Source: Climate Change Monitoring Report 2016, JMA http://www.jma.go.jp/jma/en/NMHS/ccmr/4_ccmr2016_chapter2.pdf

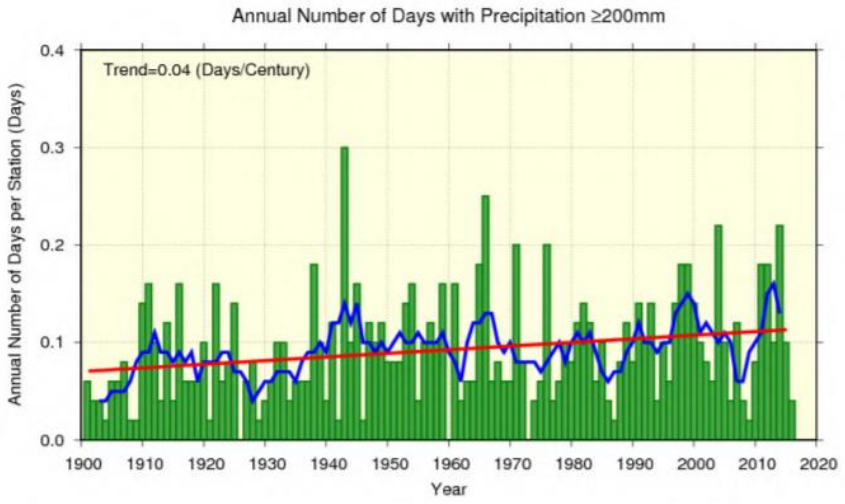
Observed climate change in Japan (precipitation)

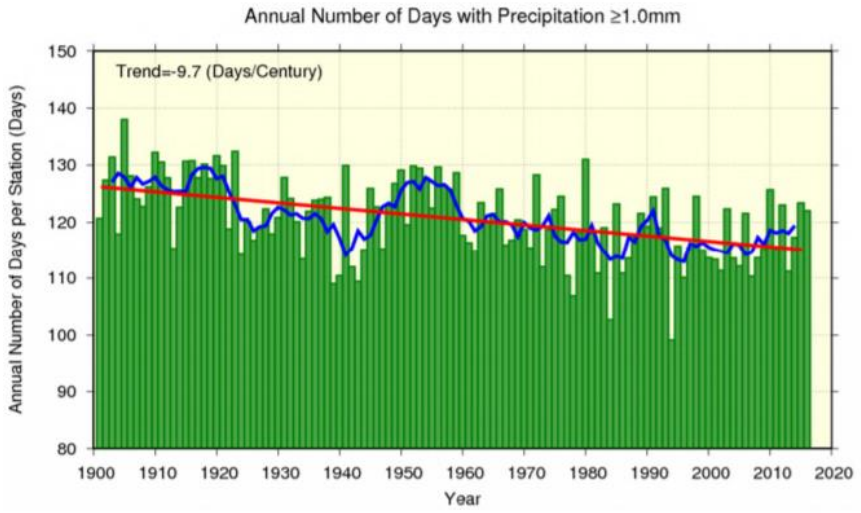
Annual rainfall trend

- The annual number of days with precipitation of ≥ 200 mm is extremely likely to have increased from 1901-2016.

Annual dry day trend

- The annual number of days with precipitation of ≥ 1.0 mm is virtually certain to have decreased from 1902-2016.



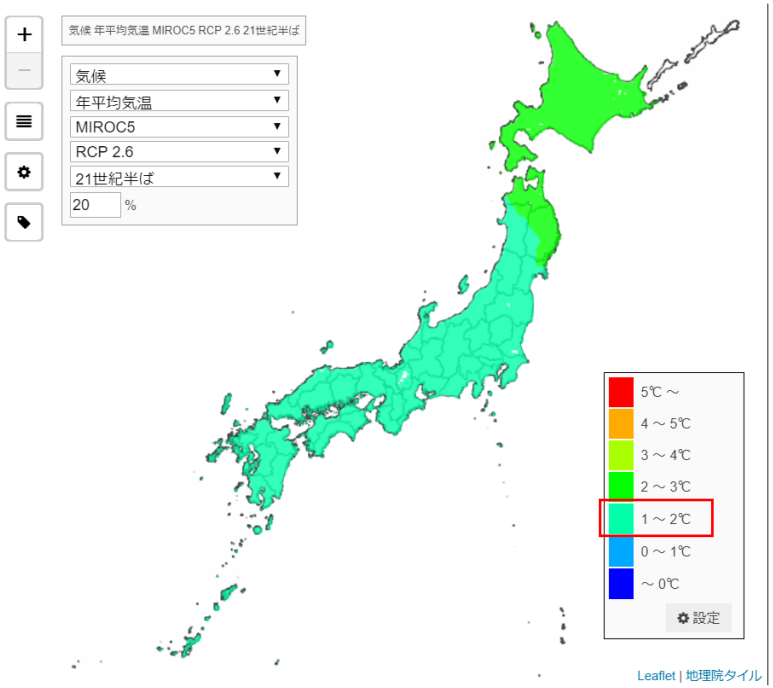


Source: Climate Change Monitoring Report 2016, JMA http://www.jma.go.jp/jma/en/NMHS/ccmr/4_ccmr2016_chapter2.pdf

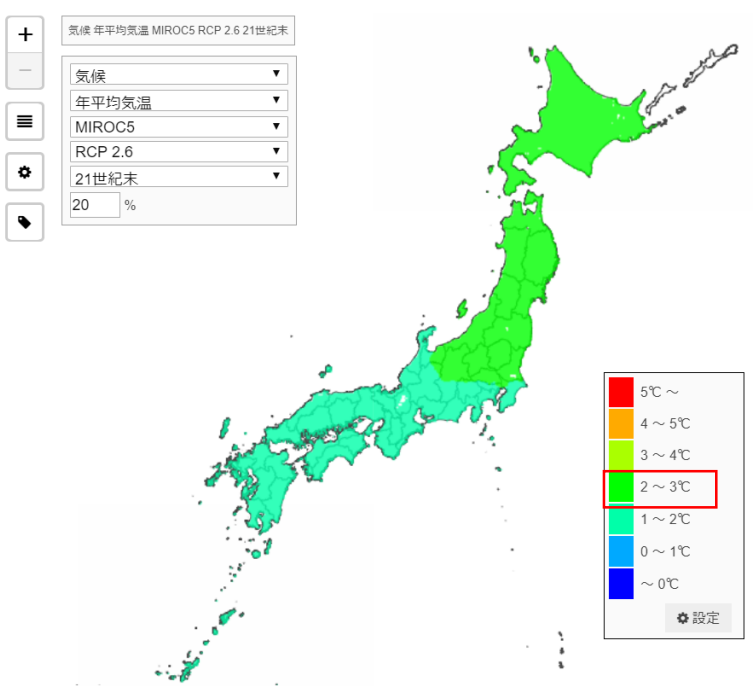
Projected climate change in Japan (temperature)

Projected annual mean temperature

with **RCP 2.6** scenario, the projected area of 1-2℃ rise dominates in the mid of 21st century, whereas the area of 2-3℃ increases at the end of this century.



Middle of the 21 century



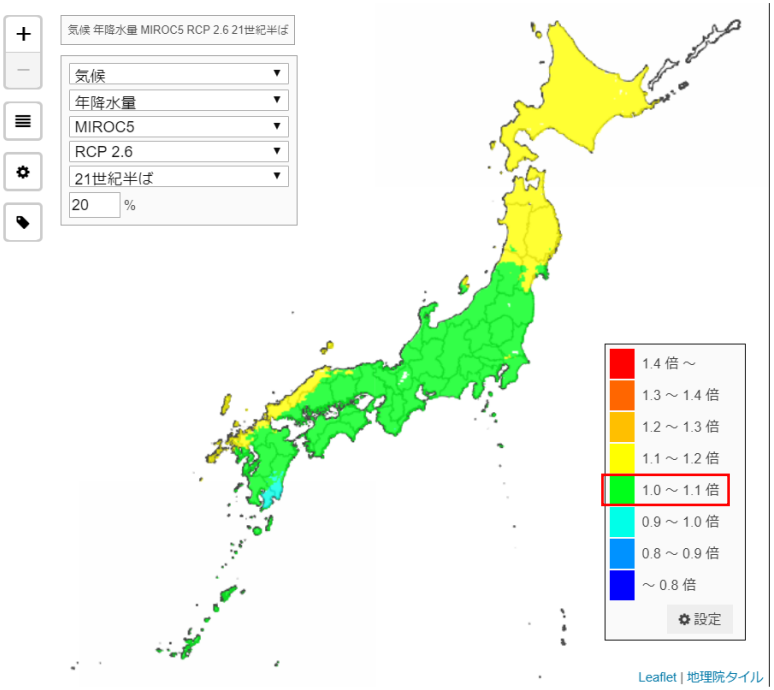
End of the 21 century

Source: S-8 Comprehensive Study on Impact Assessment and Adaptation for Climate Change

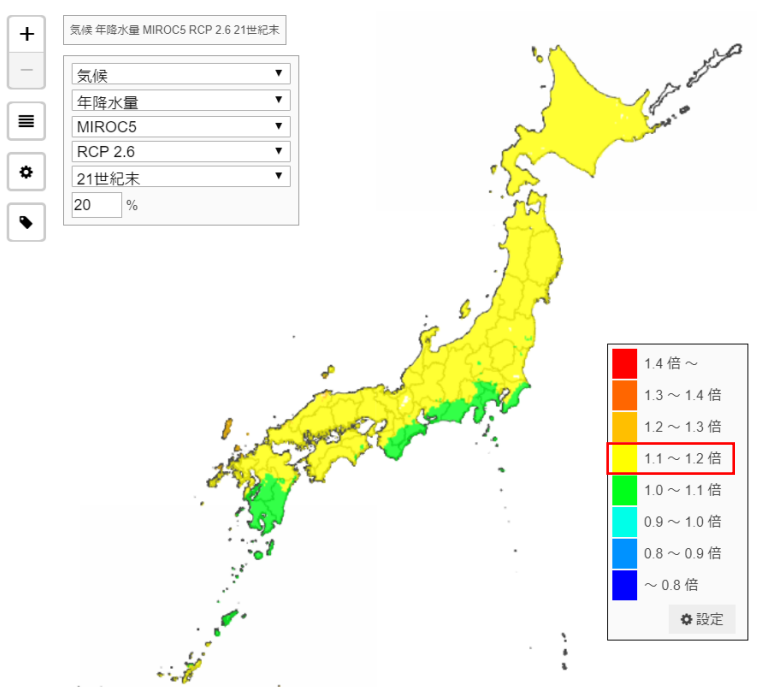
Projected climate change in Japan (precipitation)

Projected annual precipitation

with **RCP 2.6** scenario, the projected area of 1.0-1.1 times current precipitation dominates in the mid of 21st century, whereas the area of 1.1-1.2 times increases at the end of this century.



Middle of the 21 century

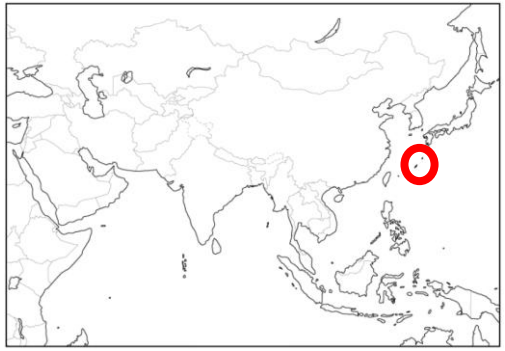


End of the 21 century

Source: S-8 Comprehensive Study on Impact Assessment and Adaptation for Climate Change

Observed Climate Change Impacts in Japan: Okinawa

Water temperature changes significantly affect coral. The temperature of 30℃ or higher for a prolonged period has caused **coral bleaching**, and if the high temperature continues for a longer period, the coral dies.

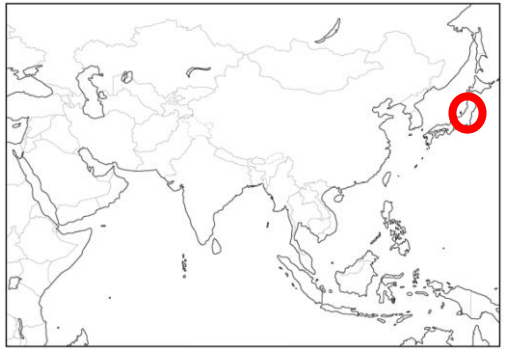


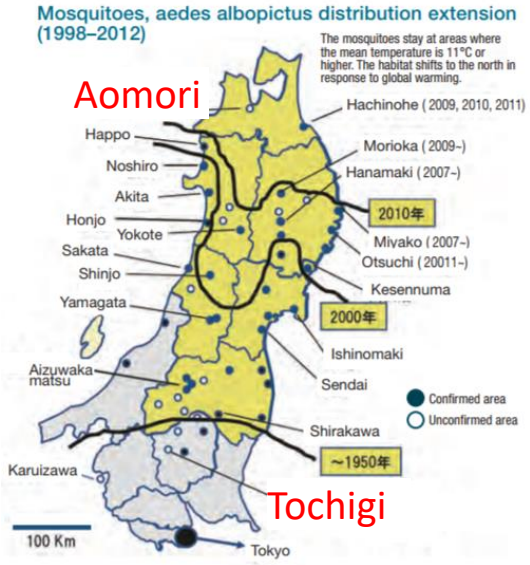
Source: Climate Change Monitoring Report 2016, JMA http://www.jma.go.jp/jma/en/NMHS/ccmr/4_ccmr2016_chapter2.pdf

Observed Climate Change Impacts in Japan: North region

In August 2014, **dengue fever was found in Japan for the first time in 70 years**. Mosquitoes, aedes albopictus, transmit dengue fever and chikungunya fever. They inhabit in areas where the annual mean temperature is 11℃ or higher.

The northern limit of the mosquito habitat in 1950s was Tochigi. Since then, the habitat has gradually **moving further north** due to global warming. For the first time in Aomori, the habitat was confirmed by a survey in 2010.





Mosquitoe, aedes albopictus

Source: Climate Change Monitoring Report 2016, JMA http://www.jma.go.jp/jma/en/NMHS/ccmr/4_ccmr2016_chapter2.pdf

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Steps for National Adaptation Planning in Japan

Fourth Environment Basic Plan (Cabinet Decision, April 2012) decided to assess impacts of climate change and to promote adaptation measures

"Expert Committee on Climate Change Impact Assessment" was established under Central Environment Council (2 July, 2013)

- Projection of climate change and its impacts in Japan
- Reviews for more than 500 papers by 57 experts
- Assessment for 56 items in 7 thematic areas
- Expert judgement on significance, urgency and confidence levels

Report on Climate Change Impact Assessment in Japan (10 March, 2015)

Inter-Ministry Meeting for Climate Change Adaptation (11 September, 2015)

National Adaptation Plan was draft by the Inter-Ministry Meeting, and called for **public comments** (23 October, 2015)

National Adaptation Plan was formulated (Cabinet decision, 27 November 2015)

GOJ communicated Undertakings in adaptation planning in Japan in line with paragraph 12 of decision 1/CP.20http://unfccc.int/focus/adaptation/undertakings_in_adaptation_planning/items/8932.php

Climate Change Impact Assessment in Japan

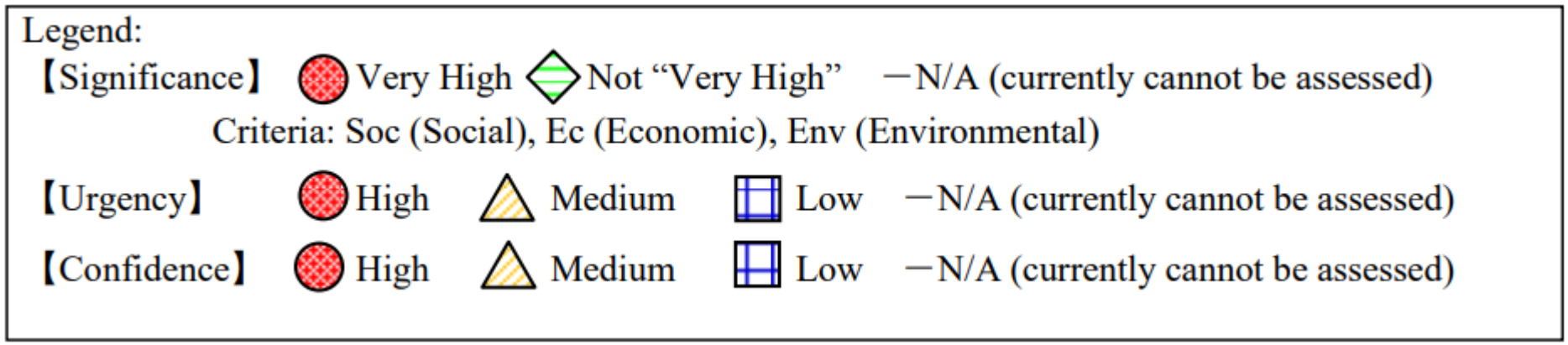
(Summary)

【Significance】 Very High ◇ Not "Very High" —: N/A(currently cannot be assessed)
【Confidence】 High △ Medium ▭ Low —: N/A(currently cannot be assessed)
【Urgency】 High △ Medium ▭ Low —: N/A(currently cannot be assessed)

Chapter	Section	Sectors	Significance	Urgency	Confidence
Agriculture, Forest/ Forestry, Fisheries	Agriculture	Paddy field rice	○	○	○
		Fruit trees	○	○	○
		Barley/Wheat, Soybean, Feed crops..	○	△	△
		Vegetables	—	△	△
		Livestock Farming	○	△	△
		Plant Pests, Weeds	○	○	○
		Water, Land and Agricultural Infrastructure	○	○	△
	Forest Forestry	Sediment, Landslide..	○	○	△
		Storm surges Tidal waves	○	○	○
		Coastal Erosion	○	△	△
		Water supply (Surface water)	○	○	△
		Timber production (e.g. Plantations)	○	○	▭
		Planted forests	○	△	△
		Natural forests/ Secondary forests	○	△	○
		Non-wood forest products (e.g. Mushrooms)	○	○	▭
	Fisheries	Migratory fish stocks (Ecology of fishes..)	○	○	△
		Marine ecosystems	○	△	▭
		Coastal ecosystems	○	○	△
		Propagation and Aquaculture..	○	○	▭
		Freshwater ecosystems	○	△	▭
		Sea-level rise	○	△	○
		Storm surges, Tidal waves	○	○	○
		Coastal Erosion	○	△	△
	Others	Risk of Mortality	○	○	○
		Heat stroke	○	○	○
		Damage from Wildlife	○	○	—
		Shifts in Distribution and Populations	○	○	○
Water environment, Water resources	Water environment	Lakes/Marshes, Dams(Reservoir)	○	△	△
		Rivers	◇	▭	▭
		Coastal areas & Closed sea areas	◇	△	▭
Water environment, Water resources	Water resources	Water supply (Surface water)	○	○	△
		Water supply (Groundwater)	◇	△	▭
		Water demand	◇	△	△
Natural Ecosystems *Only Described "assessment for Ecosystems"	Terrestrial ecosystems	Alpine / Subalpine zone	○	○	△
		Natural forests/ Secondary forests	○	△	○
		Countryside-landscape (Satochi-Satoyama)	◇	△	▭
		Planted forests	○	△	△
		Damage from Wildlife	○	○	—
		Material Balance	○	△	△
	Freshwater ecosystems	Lakes / Marshes	○	△	▭
		Rivers	○	△	▭
		Marshlands	○	△	▭
	Coastal ecosystems	Subtropics	○	○	△
		Temperate / Subarctic	○	○	△
	Marine ecosystems	Marine ecosystems	○	△	▭
	Phenology	Phenology	◇	○	○
	Shifts in Distribution and Populations	Native species	○	○	○
		Alien species	○	○	△
Natural disasters, Coastal areas	Water-related disasters	Floods	○	○	○
		Inland waters	○	○	△
		Storm surges, Tidal waves	○	○	○
	Storm surges, Tidal waves	Sea-level rise	○	△	○
		Storm surges, Tidal waves	○	○	○
		Coastal Erosion	○	△	△
	Sediment-related disasters	Sediment, Landslide..	○	○	△
	Others	Strong wind..	○	△	△
Human health	Heat stress	Risk of Mortality	○	○	○
		Heat stroke	○	○	○
	Infection	Vectorborne diseases	○	△	△
		Water- and food-borne diseases	—	—	▭
		Other infectious diseases	—	—	—
	Others	Combined impacts (warming and air pollution)	—	△	△
		Impacts on vulnerable populations	—	○	▭
		Health impacts without leading to clinical symptoms	—	▭	▭
Industrial / Economic activities	Industrial / Economic activities	Manufacture	◇	▭	▭
		Energy Demand and Supply	◇	▭	△
		Commerce	—	—	▭
		Construction	—	—	—
		Medical	—	—	—
	Finance, Insurance	Finance, Insurance	○	△	△
	Tourism	Tourism	○	△	○
	Others	Other impacts (e.g. Overseas impact)	—	—	▭
Life of Citizenry, Urban Life	Urban Infrastructure, Lifeline	Water supply, Transportation..	○	○	▭
	Life with sense of culture & history	Phenology	◇	○	○
		Traditional events / Local industry	—	○	▭
	Others	Impact on life due to Heat stress	○	○	○

- **Significance**—Assess in terms of three criteria: social, economic, and environmental.
- **Urgency**—Assess in terms of two criteria: Timing of occurrence of impacts, and timing required to initiate adaptation measures and critical decision-making.
- **Confidence**—Assess in terms of two criteria (applying to some extent the approaches to confidence used in the IPCC Fifth Assessment Report):

The impact assessment results are expressed using the following legend.



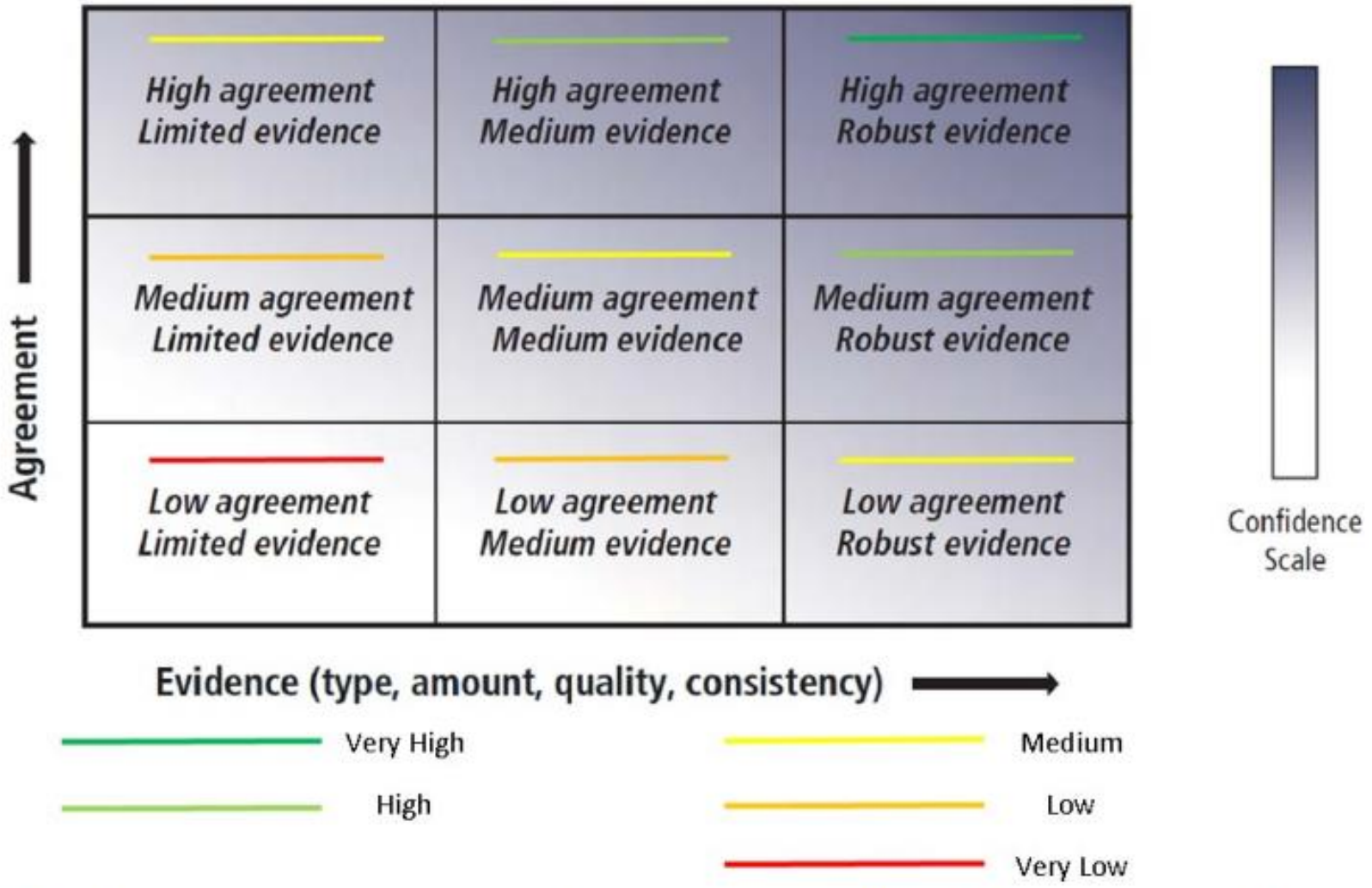


Figure: Confidence levels are a combination of level of agreement and evidence. There are five levels shown with colours. (IPCC 2013)

Inter-Ministry Meeting for Adaptation to the Impacts of Climate Change

September 11, 2015 agreed by the relevant ministries and agencies
October 23, 2015 Partial Revision

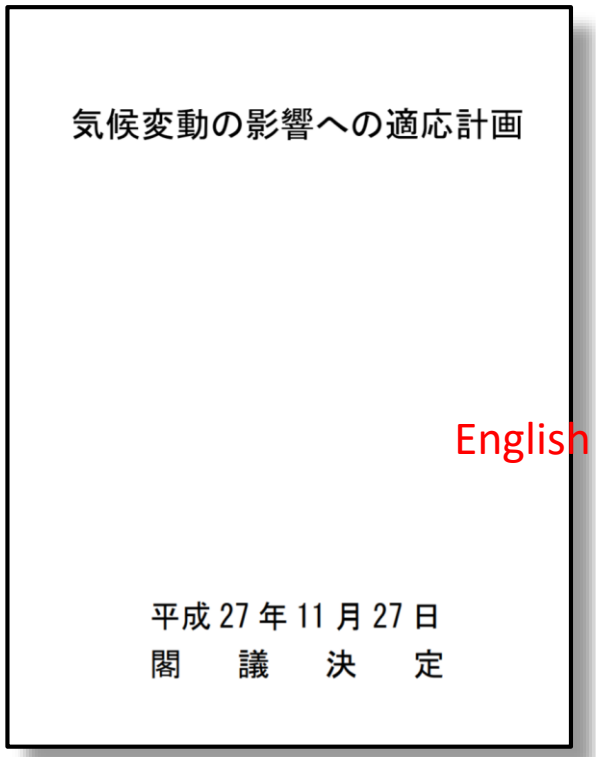
1. **Inter-Ministry Meeting** for adaptation to the impacts of climate change (Hereinafter referred to as “Inter-Ministry Meeting ") shall be held to promote the necessary measures comprehensively and systematically regarding adaptation to the impacts of climate change in close cooperation with the relevant ministries and agencies
2. The composition of Inter-Ministry Meeting is as follows. A chairman may request to increase members as required

Chairman **Cabinet Secretariat**

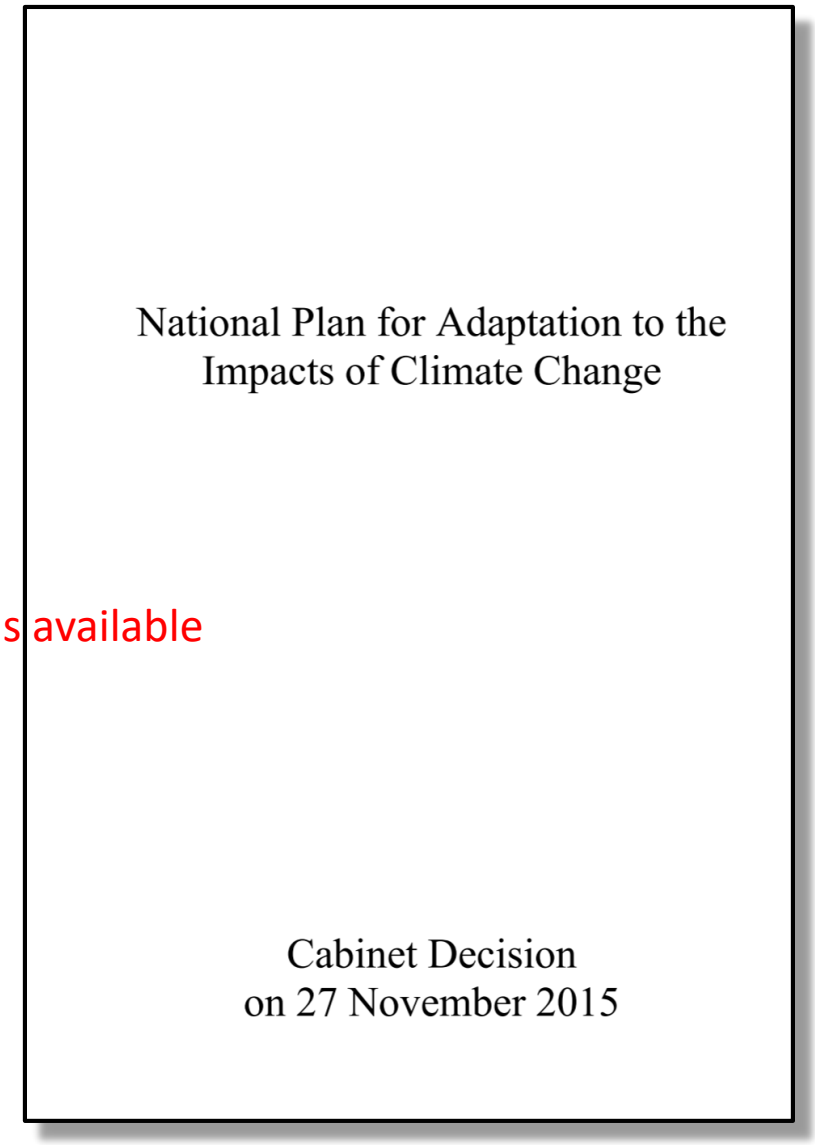
Members **Cabinet** Secretariat　Cabinet Office　Financial Services Agency
Ministry of **Internal Affairs and Communications**
Ministry of **Foreign Affairs**
Ministry of **Finance**
Ministry of **Education, Culture, Sports, Science and Technology**
Ministry of **Health, Labour and Welfare**
Ministry of **Agriculture, Forestry and Fisheries of Japan**
Ministry of **Economy, Trade and Industry**
Ministry of **Land, Infrastructure and Transport**
Ministry of the **Environment**

3. General affairs of Inter-Ministry Meeting shall be handled by **Ministry of the Environment**
4. In addition to those listed in the preceding items, concerning the operation of Inter-Ministry Meeting and other necessary matters should be determined by the chairman

Japan's NAP



English version is available



Contents of Japan's NAP

Chapters

I. **Basic concept**
   (Vision, Basic strategy, Period, Basic approach)

II. **Sectoral measures**

III. **Basic measures and international measures**

Contents of Japan's NAP

Chapters

I. Basic concept

(Vision, Basic strategy, Period, Basic approach)

Vision of society

By promoting adaptation measures to climate change impacts, **to build a secure, safe and sustainable society** that is **able to minimizing and avoiding damage** for life of citizens, properties, economics, and natural environment due to its impacts, and **to be resilient against damage**.

Contents of Japan's NAP

Chapters

I. Basic concept

(Vision, Basic strategy, Period, Basic approach)

Basic strategy

1. Mainstreaming adaptation into government policy
2. Enhancement of scientific findings
3. Promotion of understanding and cooperation through sharing and providing information about climate-related risks
4. Promotion of adaptation in region
5. Promotion of international cooperation and contribution

Contents of Japan's NAP

Chapters

I. Basic concept

(Vision, Basic strategy, Period, Basic approach)

Period

Considered with long-term perspective **till the end of 21st century**, showing the basic direction in about **coming 10 years.**

Contents of Japan's NAP

Chapters

I. Basic concept

(Vision, Basic strategy, Period, Basic approach)

Basic approach

- Adaptation will be promoted by using an adaptive approach that involves a repeated cycle of conducting ongoing observation, monitoring, and projection of climate change and its impacts, implementing regular assessments of impacts, considering and implementing adaptation measures, monitoring the state of progress, and making revisions as required.
- **An assessment of climate change impacts** is to be implemented and formulated approximately **every five years**, and the Plan is to be revised as required.

Contents of Japan's NAP

Chapters

I. Basic concept
   (Vision, Basic strategy, Period, Basic approach)

II. Sectoral measures

III. Basic measures and international measures

Contents of Japan's NAP

Chapters

II. Sectoral measures

Agriculture, forest / forestry, fisheries

Water environment and water resources

Natural ecosystems

Natural disasters and coastal areas

Human health

Industrial and economic activity

Life of citizenry and urban life

AIM ASIA-PACIFIC INTEGRATED MODEL

Contents of Japan's NAP

Chapters

II. Sectoral measures

Examples

Agriculture, forest / forestry, fisheries

Impacts:

Rice: Declining ratio of first-class rice due to high temperature

Fruits: Poor coloring of apples and other fruits

Adaptation:

Rice: Development and diffusion of high-temperature-resistant varieties of rice

Fruits: Switch to superior colored varieties of fruit

Contents of Japan's NAP

Chapters

II. Sectoral measures

Water environment and water resources

Examples

Impacts:

- Changes in water temperatures, water quality
- Increases in drought due to increases in the number of rainless days and decrease in the total amount of snowfall

Adaptation:

- To promote measures to reduce the loads flowing into lakes and marshes
- To promote efforts to formulate drought response timelines

Contents of Japan's NAP

Chapters

II. Sectoral measures

Natural ecosystems

Examples

Impacts:

- Changes in vegetation distribution and expansion of wildlife distribution due to increase in temperature and shift in days of snow-melting earlier

Adaptation:

- To ascertain the changes in ecosystems and species by using monitoring
- To conserve and restore healthy ecosystems with high climate change resilience

Contents of Japan's NAP

Chapters

II. Sectoral measures

Natural disasters
and
coastal areas

Examples

Impacts:

- Increasing frequency and intensity of water disasters, sediment-related disasters, and storm surge disasters due to increasing heavy rainfall and typhoons

Adaptation:

- Steady facility improvements and maintenance
- Promotion of urban development with consideration of disaster risks
- Hazard maps and evacuation plans

AIM
ASIA-PACIFIC INTEGRATED MODEL

Contents of Japan's NAP

Chapters

II. Sectoral measures

Human health

Examples

Impacts:

- Increases in heat stroke
- Expansion of the suitable habitat for vectors of infectious diseases

Adaptation:

- Awareness raising regarding prevention and treatment

Contents of Japan's NAP

Chapters

II. Sectoral measures

Industrial and economic activity

Examples

Impacts:

- Impacts on business production activities and leisure
- Increasing insured losses

Adaptation:

- To promote efforts by businesses in collaboration between public and private sectors
- Development of adaptation technologies

Contents of Japan's NAP

Chapters

II. Sectoral measures

Life of citizenry and urban life

Examples

Impacts:

- Damage to infrastructure and critical services

Adaptation:

- To enhance disaster prevention functions of distribution/logistics, ports and harbors, railways, airports, roads, water supply infrastructure, waste treatment facilities, and traffic safety facilities

Contents of Japan's NAP

Chapters

III. Basic measures and international measures

i. Observation and Monitoring, Research and Studies

ii. Sharing and providing information related to climate risk

iii. Promotion of adaptation in region

iv. International measures

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Promoting Adaptation in Local Governments

Chapters of NAP

III. Basic measures and international measures

i. Observation and Monitoring, Research and Studies

ii. Sharing and providing information related to climate risk

iii. Promotion of adaptation in region

iv. International measures

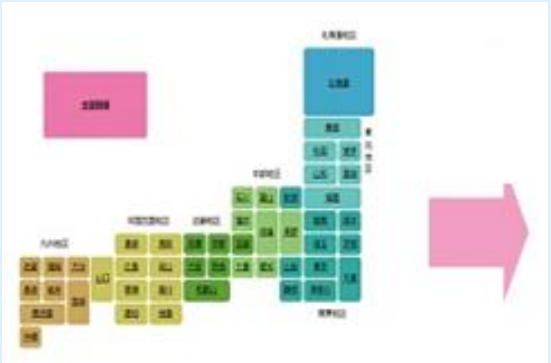
A-PLAT
気候変動適応情報プラットフォーム
Adaptation for the future.
CLIMATE CHANGE ADAPTATION PLATFORM, JAPAN

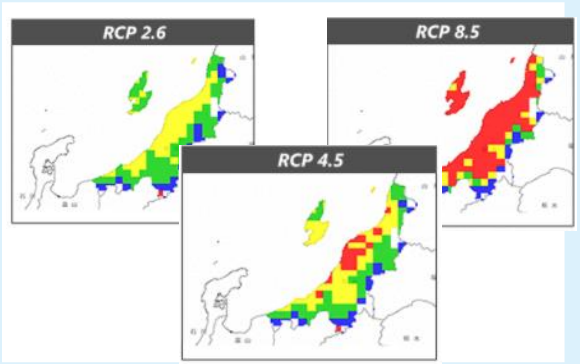
AIM ASIA-PACIFIC INTEGRATED MODEL

Outline of A-PLAT

- **A-PLAT** (Climate Change **A**daptation **Plat**form) is a "**One-stop**" online resource for adaptation to climate-change impacts in Japan.
  - Aims at being a basis for adaptation actions of local governments, businesses, and citizens.
  - Collects and provides climate risk information and best practices; develops tools to promote adaptation actions.
  - Operated by the National Institute for Environmental Studies (NIES) with cooperation of relevant ministries.

Provide climate risk information





Stakeholders:


Local Government


Private Sectors


Individuals & Communities

http://www.adaptation-platform.nies.go.jp/index.html

A-PLAT

Consists of 6 key sections

Key pages are:

1. What's Climate Change Adaptation?
2. National Adaptation Plan
3. National & Local Info. (S-8)
4. For stakeholders (local government, private sectors, citizens)
5. Other contents
6. English site

1. What is climate change adaptation?

A-PLAT 気候変動適応情報プラットフォーム

ABOUT　リンク集　海外情報　ツール　English

Google カスタム検索

HOME > 気候変動と適応 > 気候変動適応とは？

- 気候変動と適応
  - 気候変動と適応
  - 気候変動適応とは？
  - 地域の適応策インタビュー
- 政府の取組
- 地方公共団体の適応
- 事業者の適応
- 個人の適応
- 全国・都道府県情報

関連メニュー

- 地域適応コンソーシアム事業
- 分野別影響＆適応

地域適応コンソーシアム事業

地域適応コンソーシアム事業 参加者・関係者専用ページ

気候変動適応とは？

人間社会や自然の生態系が危機に陥らないためには、今すぐ、世界の国々が協力しあい、連携しながら、実効性
減の取組である「緩和」を行っていく必要があります。一方で、各地で表れ始めている気候変動による影響への
す。

- 地球温暖化について
- 温暖化への適応
- 温暖化による影響と適応策

General Information on
- **Climate change**
- **Impacts**
- **Adaptation**

AIM ASIA-PACIFIC INTEGRATED MODEL

2. National Adaptation Plan

A-PLAT 気候変動適応情報プラットフォーム

ABOUT　リンク集　海外情報　ツール　English

Google カスタム検索

HOME > 政府の取組 > 政府の適応計画

- 気候変動と適応
- 政府の取組
  - 政府の適応計画
- 地方公共団体の適応
- 事業者の適応
- 個人の適応
- 全国・都道府県情報

関連メニュー

- 地域適応コンソーシアム事業
- 分野別影響＆適応

地域適応コンソーシアム事業

地域適応コンソーシアム事業 参加者・関係者専用ページ

地方公共団体会員ページ

全国・都道府県情報 WebGIS

S-8

政府の適応計画

- 気候変動の影響への適応計画（平成27年11月27日閣議決定）
  http://www.env.go.jp/earth/tekiou

Link to National Adaptation Plan of Japan

概要 Outline

気候変動による様々な影響に対し、政府全体として整合のとれた取組を総合的かつ計画的に推進するため、本年11月25日の第３回気候変動の影響への適応に関する関係府省庁連絡会議において、「気候変動の影響への適応計画（閣議決定案）」が取りまとめられ、「気候変動の影響への適応計画」が閣議決定されました。

本計画は、気候変動の影響による被害を最小化あるいは回避し、迅速に回復できる、安全・安心で持続可能な社会の構築を目指すものです。できるだけ手戻りを回避し適時的確に適応を進めていけるよう、気候変動及びその影響の観測・監視を継続して行い、最新の科学的知見を把握し、気候変動及びその影響の評価を定期的に実施し、当該影響評価の結果を踏まえ各分野における適応策の検討・実施を行い、その進捗状況を把握し、必要に応じ見直します。このサイクルを繰り返し行うことを通じ、政府一丸となって、気候変動の影響への適応を計画的に進めていきます。

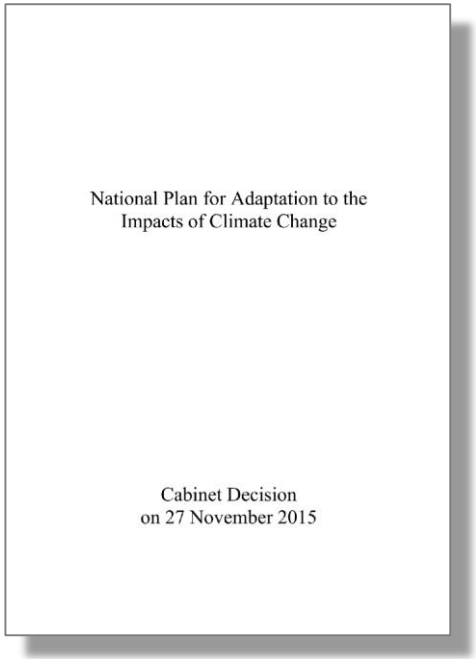
内容 Main contents

目指すべき社会の姿

気候変動の影響への適応策の推進により、当該影響による国民の生命、 財産及び生活、経済、自然環境等への被害を最小化あるいは回避し、 迅速に回復できる、安全・安心で持続可能な社会の構築。

基本戦略

（１）政府施策への適応の組み込み
（２）科学的知見の充実
（３）気候リスク情報等の共有と提供を通じ 理解と協力の促進
（４）地域での適応の推進
（５）国際協力・貢献の推進


National Plan for Adaptation to the Impacts of Climate Change

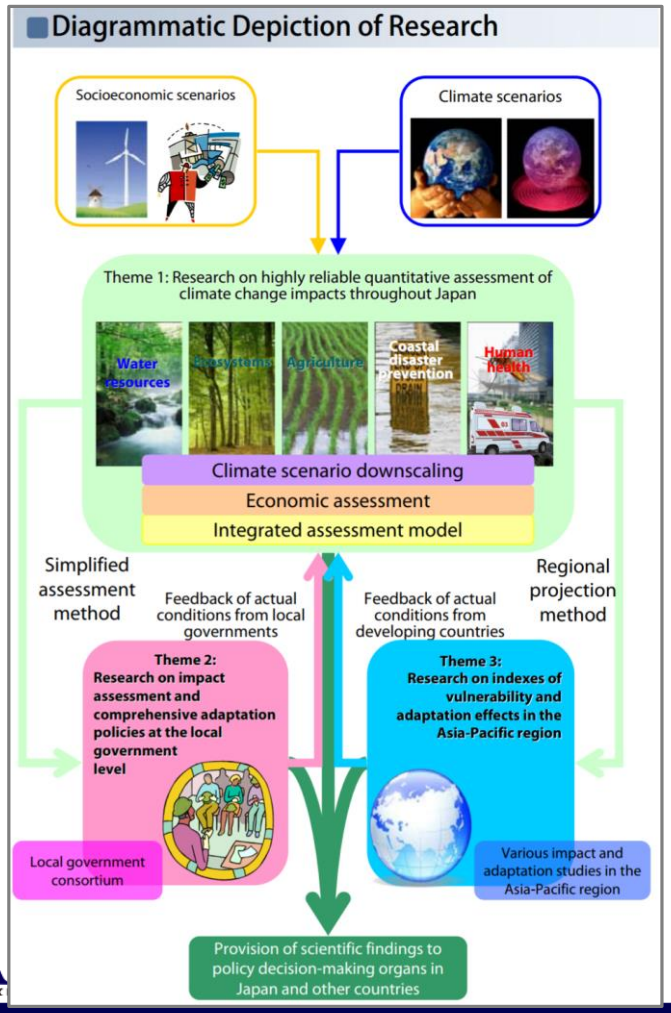
Cabinet Decision
on 27 November 2015

AIM ASIA-PACIFIC INTEGRATED MODEL

3. National & Local Info. (Outline of S-8)

S-8
環境省環境研究総合推進費S-8

Comprehensive Study on Impact Assessment and Adaptation for Climate Change" funded by the Ministry of Environment, JAPAN



Model

- MIROC5
- MRI-CGCM3.0
- GFDL CM3
- HadGEM2-ES

Scenario

- RCP 2.6
- RCP 4.5
- RCP 8.5

Period

- Present
- Middle of the 21 century
- End of the 21 century

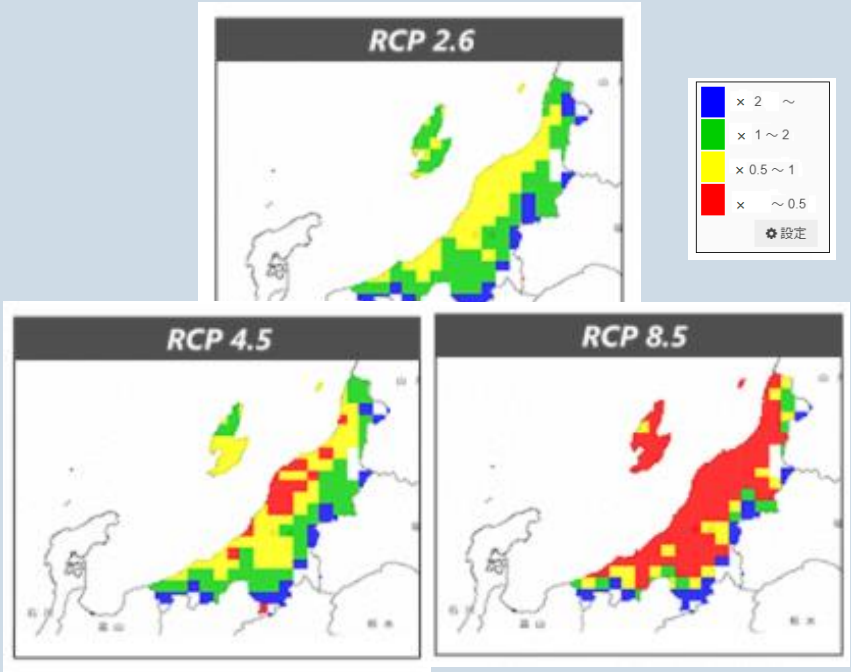
Indices

Climate	• Temperature • Precipitation
Water resources	• Chlorophyll
Disaster prevention	• Landslide probability • Sand beach loss rate
Ecosystem	• potential habitat • Pinus pumila • Abies veitchii • Fagus crenata • Fagus crenata • Quercus acuta
Agriculture	• Rice yield • Persistence rate of suitable cultivation area for Citrus unshiu • Distribution rate of suitable cultivation area for Citrus tankan
Health	• Heat stress excess mortality • Number of heat stroke patients taken to hospital • Aedes albopictus distribution

3. National & Local Info. (S-8)

Future climate projections and quantitative climate-change impact assessment by prefecture

Target area: Niigata pref.
Index: Rice yield (quality oriented)
Period: the end of 21th



4. Contents for stakeholders

Local Governments

List of adaptation plans by local gov.

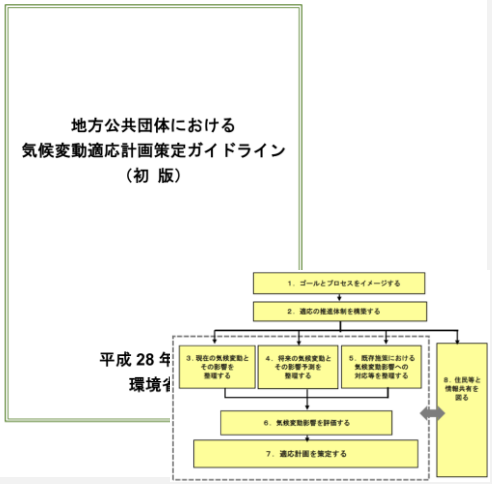
東北地区

青森県		
岩手県		・岩手県気候変動適応策取組方針 （平成２９年３月策定）NEW
秋田県		・第2次秋田県地球温暖化対策推進計画 （平成２９年3月策定）NEW
山形県		・山形県地球温暖化対策実行計画（中間見直し版） （平成２９年3月策定）NEW
宮城県	仙台市	・仙台市地球温暖化対策推進計画2016-2020 （平成28年3月改定）
福島県		・福島県地球温暖化対策推進計画 （平成２９年3月策定）NEW

関東地区

茨城県		・茨城県地球温暖化対策実行計画 （平成２９年3月改定）NEW
栃木県		・栃木県地球温暖化対策実行計画 （平成２７年度策定）
群馬県		・群馬県地球温暖化対策実行計画（改定版） （平成２６年度改訂）
埼玉県		・ストップ温暖化・埼玉ナビゲーション2050（改訂版） （埼玉県地球温暖化対策実行計画（区域施策編）） （平成２６年度改訂） ・地球温暖化への適応に向けて～取組の方向性～（平成２８年3月策定）NEW
千葉県		・千葉県地球温暖化対策実行計画～CO2CO2スマートプラン～（平成２８年９月策定）
	千葉市	・千葉市地球温暖化対策実行計画（平成２８年10月改定）
東京都		・東京都環境基本計画 （平成２７年度策定）
		・神奈川県地球温暖化対策計画（平成２８年10月改定）

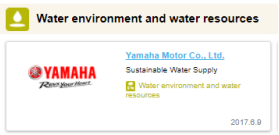
Municipal Adaptation Planning Guideline



Private Sector

*Climate risk

*Adaptation Business



Business workshop (1. Nov 2017)

156 participants

Individuals

5. Other contents

Tool :

Archive of research documents reviewed by experts for NAP

キーワード検索

AND OR 検索する リセット/全件表示

農業、森林・林業、水産業 水環境・水資源 自然生態系 自然災害・沿岸域 健康 産業・経済活動 国民生活・都市生活

各項目右側の「+」ボタンをクリックすると該当する文献が表示されます。

農業、森林・林業、水産業

農業 | 森林・林業 | 水産業

【農業】

水稲に関する文献
現在の状況の概要情報

項目	論文等の名称	執筆者名	発表年	掲載誌	対象地域	論文等のリンク先
水稲	気候変動の観測・予測及び影響評価統合レポート『日本の気候変動とその影響』（2012年度版）	文部科学省・気象庁・環境省	2013	–	全国	環境省HP
水稲	近年の日本における稲作気象の変化とその水稲収量・外観品質への影響	河津俊作、本間香貴、堀江武、白岩立彦	2007	日本作物学会	全国	【DOI】J-STAGE
水稲	平成25年地球温暖化影響調査レポート	農林水産省	2013	–	全国	農林水産省HP
水稲	Modeling the multiple effects of temperature and radiation on rice quality.	Okada M, Iizumi T, Hayashi Y, Yokozawa M.	2011	IOP science	全国	【DOI】IOP science
水稲	Spikelet sterility of rice observed in the record hot summer of 2007 and the factors associated with its variation.	Hasegawa T, Ishimaru T, Kondo M, Kuwagata T, Yoshimoto Y, Fukuoka M.	2011	農業気象 67(4)	全国	【DOI】J-STAGE
水稲	平成22年度高温適応技術レポート	農林水産省	2011	–	全国	農林水産省HP

将来予測される影響の概要情報

水稲	気候変動の観測・予測及び影響評価統合レポート『日本の気候変動とその影響』（2012年度版）	文部科学省・気象庁・環境省	2013	–	全国	環境省HP

Links:

Japan's national projects on adaptation

関係府省庁 関係機関 国の主な研究 連携施策 その他の組織 海外機関

国の主な研究

DIAS Data Integration & Analysis System
データ統合・解析システムDIAS
http://www.diasjp.net/

SOUSEI 気候変動リスク情報創生プログラム
気候変動リスク情報創生プログラムNEW
http://www.jamstec.go.jp/sousei/

SI-CAT
気候変動適応技術社会実装プログラム
https://si-cat.jp/

S-8
環境省環境研究総合推進費 戦略研究開発領域S-8
温暖化影響評価・適応政策に関する総合的研究
http://www.nies.go.jp/s8_project/index.html

MiLAi
環境省環境研究総合推進費 戦略研究プロジェクトS-14
気候変動の緩和策と適応策の統合的戦略研究
http://s-14.iis.u-tokyo.ac.jp/

6. A-PLAT English site

Menu:

1. Climate Change Adaptation
2. National Adaptation Plan
3. Impact & Adaptation
4. For stakeholders (local government, private sectors)
5. International Actions

Contents: Japanese ⇔ English

Japanese site :

- What's Climate Change Adaptation?
- National Adaptation Plan
- Impact & adaptation
- Let’s Adapt!
- National & Local information on climate-change impacts & projections
- Overseas information
- Tool
- Local Gov. member site
- About this site
- FAQ
- Contact
- Links

English site :

- What's Climate Change Adaptation?
- National Adaptation Plan
- Impact and Adaptation(abridged of J site)
- Let’s Adapt! (Limited to “Local Gov”)
- N/A
- International Network
- N/A
- N/A
- About this site
- N/A
- N/A
- N/A

6. 1 Climate Change Adaptation

A-PLAT CLIMATE CHANGE ADAPTATION PLATFORM, JAPAN
気候変動適応情報プラットフォーム
Adaptation for the future.

環境省 Ministry of the Environment | National Institute for Environmental Studies, Japan | Office for Coordination of Climate Change Observation

HOME About this

Climate Change Adaptation | National Adaptation Plan of Japan | Impact & Adaptation | Let's Adapt! | International Action

What's Climate Change Adaptation?

HOME > What's Climate Change Adaptation?

What's Climate Change Adaptation?

About Climate Change - Changes the World Faces -

In recent years, extreme weather and climate events, such as strong storms and hurricanes, extreme precipitation, drought, and heat waves, have become more frequent and severe around the world. These extreme events resulted in significant loss of life and serious damages to crops.

Furthermore, sea level rise has recently accelerated with glaciers continuing to shrink worldwide as a result of global warming. The mean rate of sea level rise was approximately 1.7 mm per year between 1901 and 2010 and increased to approximately 3.2 mm per year between 1993 and 2010. The main contributor to increased rates of sea level rise is thermal expansion of the oceans.

Increases in air and ocean temperatures caused by climate change have severe impacts on terrestrial, ocean, and ope ecosystems.

Source: Ministry of the Environment, "STOP GLOBAL WARMING 2015" , Chapter 1, Global Warming

General Information on
- **Climate change**
- **Impacts**
- **Adaptation**

in Japan and the world

Adaptation to Climate Change

Adaptation is the process of adjusting natural systems and human society to actual or expected climate change effects in case the climate impacts are inevitable despite taking mitigation actions.

Risks of climate-related impacts result from the interaction of climate-related hazards (including disasters and hazardous events) with the vulnerability (propensity or predisposition to be adversely affected) and exposure of human and natural systems. Changes in both the climate system and socioeconomic processes including adaptation and mitigation are the drivers of hazards, exposure, and vulnerability.

Since there are various kinds of risks originated from climate change, adaptation measures appropriate for each region, such as improvement of legal and social systems, are required. Moreover, it is important to exploit beneficial opportunities of climate change.

Efforts Toward Adaptation in Japan

In Japan, the "National Plan for Adaptation to the Impacts of Climate Change" was developed in 2015. Since the effects of climate change vary by region, local governments have a significant role in developing and implementing adaptation measures.

Development of Heat-tolerant Chickens

Birds are inherently not tolerant to heat because they have no sweat glands and their body is covered with feathers. In hens, as the summer heat intensifies, a decline in the egg-laying rate, a deterioration in the egg quality, and an increase in the number of sudden deaths have been reported. In order to develop heat-tolerant chickens, some tests were conducted on hens fed with high-antioxidant food. The results showed productivity improvement by with mitigating the decline in the egg-laying rates, daily egg production, and quality of eggs.

Cultivation of Citrus in Tohoku Region

An experiment to grow eight kinds of citrus plants including Citrus sudachi, Citrus sphaerocarpa, Citrus junos, and Citrus unshiu in the open field was conducted. Five of the plants survived the winter in relatively good condition under the non-woven cloth covers. This result suggests that those citrus fruit plants can be grown successfully in the cold Tohoku region. In the future, investigation on consistent cultivation methods will be promoted.

AIM ASIA-PACIFIC INTEGRATED MODEL

6. 2 National Adaptation Plan

National Adaptation Plan of Japan
National Plan for Adaptation to the Impacts of Climate Change

HOME ›National Plan for Adaptation to the Impacts of Climate Change

National Plan for Adaptation to the Impacts of Climate Change

National Plan for Adaptation to the Impacts of Climate Change was formulates 1st adaptation plan as Japan's government in order to progress adaptation to climate change impacts systematically and comprehensively.

National Plan for Adaptation to the Impacts of Climate Change (PDF)

- The IPCC Assessment Report shows that global mean temperature will increase even if reduction of GHG is advanced.
- It is important to promote "adaptation" in order to address climate change


Mountain stream of Oirase, Aomori

【Projection】

Average 1.1 ℃(0.5-1.7 ℃) increase with stringent mitigation efforts Average 4.4 ℃ (3.4-.4 ℃) increase with massive emissions of GHG

* comparison of the end of 21st century with the end of 20th century

NAP in English is available

National Plan for Adaptation to the Impacts of Climate Change

Cabinet Decision
on 27 November 2015

6. 3 Impact & Adaptation

Summary of

- ✓ **Current and projected climate change + impacts in Japan**
- ✓ **Basic strategies defined in NAP**
- ✓ **Sectorial measures (abridged from NAP)**

6. 4 For stakeholders

For Local Governments

It is necessary to examine "adaptations" by taking regional characteristics into account.

One of the five basic strategies of the "National Plan for Adaptation to the Impacts of Climate Change" is the "promotion of adaptation in a region".

Impacts of climate change, vulnerabilities, and priorities vary substantially depending on regional characteristics. Therefore, the strategy insists on the importance that each local government considers adaptation measures proactively and addresses them carefully.

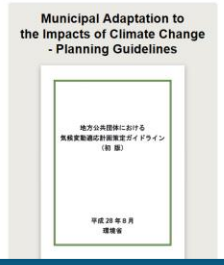
Furthermore, the strategy encourages local governments, having a deep connection with the lives of residents, to be the main agent to conduct impact assessments of climate change and develop and implement adaptation plans.

Municipal Adaptation to the Impacts of Climate Change - Planning Guidelines

For persons in charge of formulation of the adaptation strategies in local governments, "Municipal Adaptation to the Impacts of Climate Change - Planning Guidelines" were established. The guidelines aim to present specific steps and challenges of impact assessments of climate change and adaptation planning.

These guidelines were prepared based on the findings of 11 local government precedents (Fukushimaken, Saitamaken, Kanagawaken, Mieken, Shigaken, Hyohgoken, Ehimeken, Kumamotoken, Nagasakiken, Sendaishi, and Kawasakishi) under the program named "the Support Project for Impact Assessments and Adaptation Planning for Climate Change", conducted by the Ministry of the Environment in 2015.

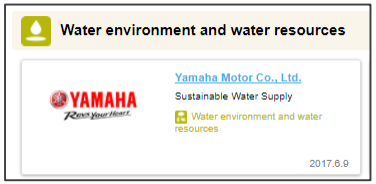
Moreover, "Briefing Sessions for the National Plan for Adaptation to the Impacts of Climate Change" targeting at the divisions of prefectures and government-designated cities were held in

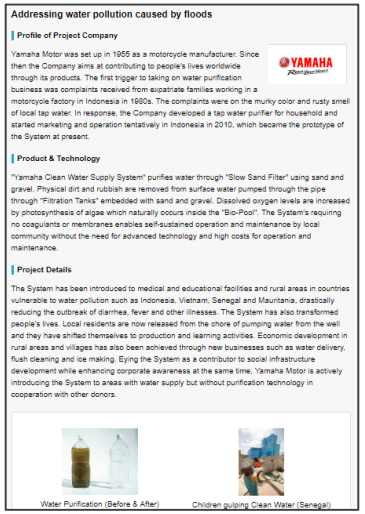


Summary of municipal adaptation planning guideline in English

Case studies of private sectors (Translated into English)

*Climate risk
*Adaptation Business





6. 5 International Actions

International Action

International Action

HOME > International Action > International Network

International Network

AP-PLAT
Asia-Pacific Climate Change Adaptation Information Platform

Asia-Pacific Adaptation Information Platform (AP-PLAT)

GLOBAL ADAPTATION NETWORK

apan asia pacific ADAPTATION NETWORK | Mobilising Knowledge and Building Capacities for Climate Resilience

Links to relevant websites

Please visit

http://www.adaptation-platform.nies.go.jp/index.html

Contents

1. Observed & Future Climate Change in Japan
2. National Adaptation Plan
3. **Promoting Adaptation in Local Governments**
4. International Cooperation

Contents of Japan's NAP

Chapters of NAP

III. Basic measures and international measures

i. Observation and Monitoring, Research and Studies

ii. Sharing and providing information related to climate risk

iii. Promotion of adaptation in region

iv. International measures

Contents of Japan's NAP

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iii. Promotion of adaptation in region

1. Municipal Adaptation to the Impacts of Climate Change – Planning Guideline –

2. Regional Adaptation Consortium

Promoting Adaptation in Local Governments

Chapters of NAP

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i. Observation and Monitoring, Research and Studies

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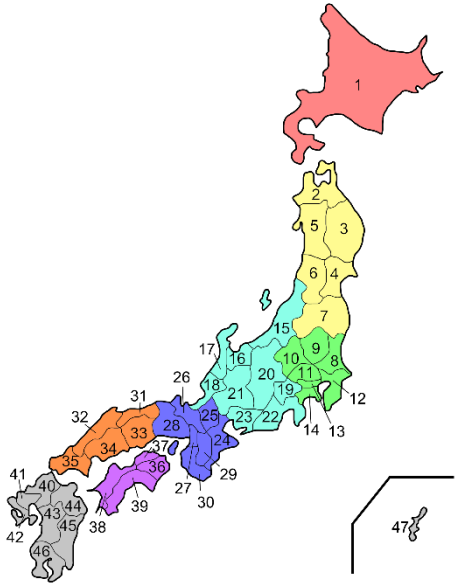
1. Municipal Adaptation to the Impacts of Climate Change – Planning Guideline –

2. Regional Adaptation Consortium

Promoting Adaptation in Local Governments

Administrative divisions in Japan:



47 prefectures

A prefecture is

- Sub-national entity
- Largest administrative division

20 designated cities (major cities)

A designated city has

- More than50 million population
- Designated by government ordinance
- Administrative functions including city planning, healthcare

FYI: The number of smallest divisions (city, town ,village, etc) are 1,741

Promoting Adaptation in Local Governments

1. Municipal Adaptation to the Impacts of Climate Change – Planning Guideline –

■Local Adaptation planning is at the initial stage

Act on Promotion of Global Warming Countermeasures (1998)
"local governments shall formulate a plan for measures to reduce GHG emissions…" = **Mitigation plan**

- Local governments must formulate mitigation plan, **but, adaptation planning is voluntary**

- However, adaptation-related plan is now being formed in nearly 90 % of prefectures:

  they notice the importance of adaptation

  - But, **most of the plans are incomplete**
    they state merely the necessity of adaptation in their local policy

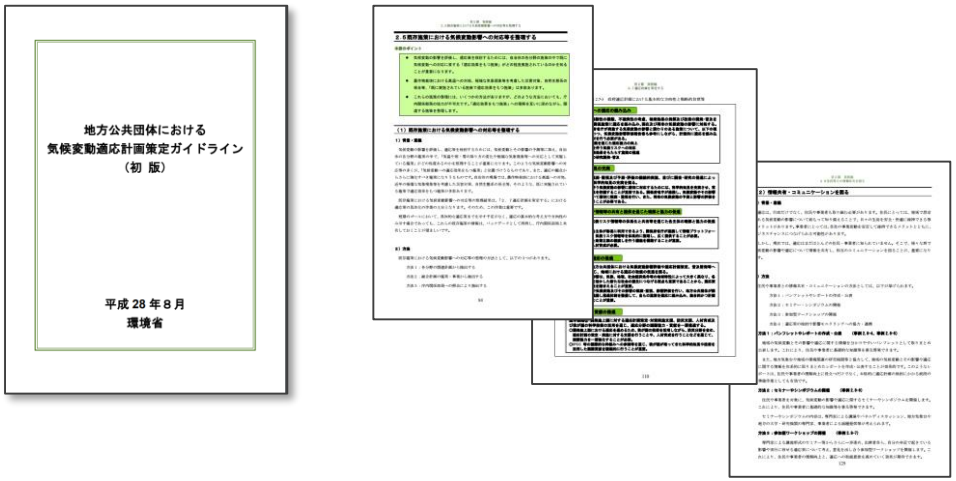
AIM ASIA-PACIFIC INTEGRATED MODEL

Promoting Adaptation in Local Governments

1. Municipal Adaptation to the Impacts of Climate Change – Planning Guideline –

■ Guideline for Local Government by MoEJ (Published in 2016)

Conceptual guideline with stepwise procedure to formulate an adaptation plan in local government



Promoting Adaptation in Local Governments

1. Municipal Adaptation to the Impacts of Climate Change – Planning Guideline –

■ Guideline for Local Government by MoEJ (Published in 2016)

Part I: Foundation – understanding **the basics of climate change impacts and adaptation (useful for beginners)**

Part II: **Practical Steps – understanding the process**

Part III: Cases –**Model examples** of local plans

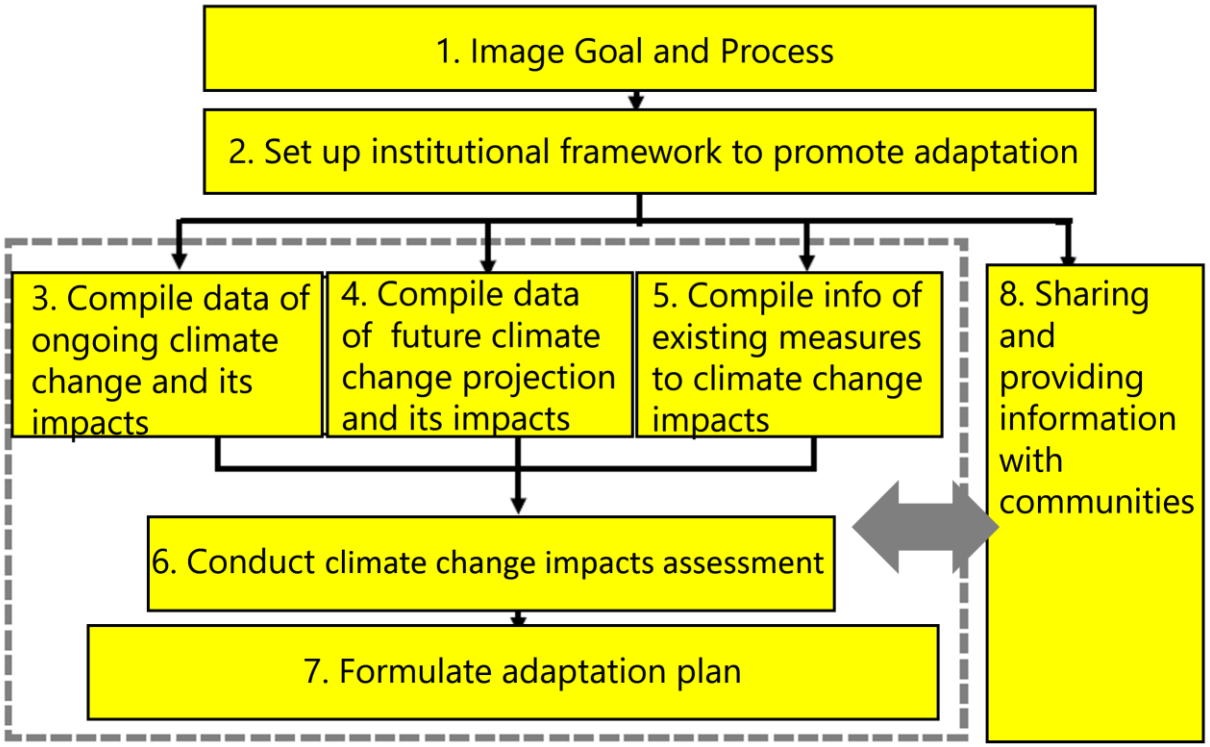
Appendix: Information sources (ex: references, relevant websites)

Promoting Adaptation in Local Governments

1. Municipal Adaptation to the Impacts of Climate Change – Planning Guideline –

■ Guideline for Local Government by MoEJ (Published in 2016)

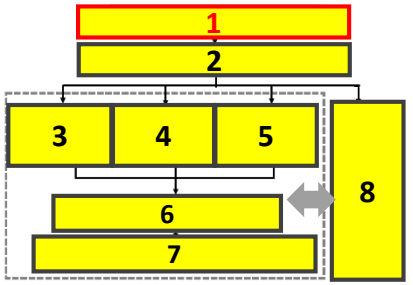
8 Steps in the guideline



AIM ASIA-PACIFIC INTEGRATED MODEL

Promoting Adaptation in Local Governments

1. Municipal Adaptation to the Impacts of Climate Change – Planning Guideline –



Step 1. Image Goal and Process

Set short-term goals and state them **in the mitigation plan**
Most local governments take this approach because

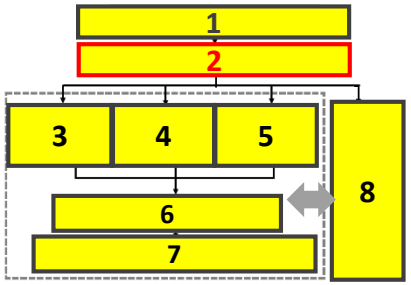
- mitigation and adaptation are inseparable
- forming adaptation specific plan takes long time

- Study advanced plans
- Seek advice from other local governments how they developed the plan
- **Hold workshops** to disseminate the necessity of adaption

  ➢ Relevant departments have little information on adaptation

Promoting Adaptation in Local Governments

1. Municipal Adaptation to the Impacts of Climate Change – Planning Guideline –



Step 2. Set up institutional framework to promote adaptation

Utilize existing committee

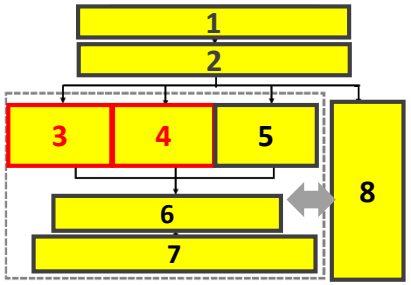
Integrate committee formed for mitigation activities into adaptation project

Also,

- **Invite relevant departments to participate to the committee**
  to cover 7 sectors defined in NAP
- **"Target readers"** of the guideline is the officers in **the environment department → leadership**
  Mayor's commitment advance the project

Promoting Adaptation in Local Governments

1. Municipal Adaptation to the Impacts of Climate Change – Planning Guideline –



Step 3, 4. Compile ongoing & projected climate data and impacts

Observed climate

- Local Meteorological Observatory

Observed impacts

- National/local official documents
- **Existing information in the relevant offices**
- **Data in local testing laboratories / universities**
- Plan and conduct monitoring for future use.

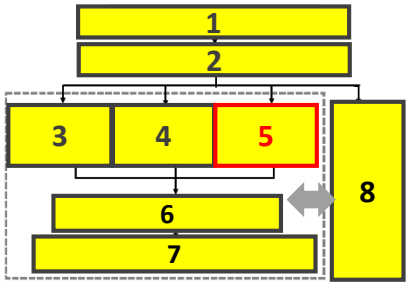
Future climate & impacts

- Information in the relevant offices
- National project/local testing laboratories' outcomes
- Review "Report on Climate Change Impact Assessment in Japan"

Promoting Adaptation in Local Governments

1. Municipal Adaptation to the Impacts of Climate Change – Planning Guideline –

Step 5. Compile Information of existing measures



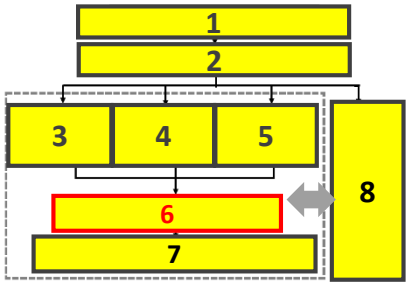
■ **To get the information, review;**

- ongoing project
- current policies and services
- relevant department's projects and activities

Extract existing and ongoing adaptation measures

Promoting Adaptation in Local Governments

1. Municipal Adaptation to the Impacts of Climate Change – Planning Guideline –



Step 6. Climate change impact assessment

■ **To assess impacts:**

In the guideline,

No uniform method for local governments is available for comprehensive assessment …

However, it introduces the national assessment results in **"Report on Climate Change Impact Assessment in Japan"** compiled for NAP by the expert committee

Promoting Adaptation in Local Governments

1. Municipal Adaptation to the Impacts of Climate Change – Planning Guideline –

Step 6. Climate change impact assessment

Case study: Saitama Pref.

Organized special committee, hosted experts from universities and research institutes **to have expert judgement** by reviewing **papers collected** for "Report on Climate Change Impact Assessment in Japan" and other resources **= the same way used when NAP was formulated**

Assessed impact on Agriculture

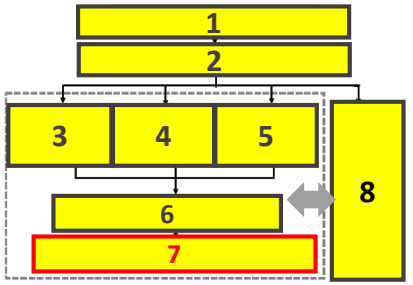
○ high, △ middle/need survey, □ available, —currently cannot be assessed

Sector	Indicator	Magnitude of impact		Existing measures		
		Short-term (2-3 yrs)	Long-term (3-10 yrs)	Current policy	Relevant measures	Review system
agriculture						
	Rice	○	○	□	△	△
	Vegetables	○	—			
	Fruits	○	△			
	Crops	○	△			

Adaptation to global warming and its direction (2016), Saitama pref.

Promoting Adaptation in Local Governments

1. Municipal Adaptation to the Impacts of Climate Change – Planning Guideline –



Step 7. Formulate Adaptation Plan

■ **To form a plan:**

- identify the scope & objectives of the plan
- **draw up a roadmap to manage and review adaptation activities by**
  - ✓applying latest knowledge
  - ✓managing the progress of the plan
  - ✓reviewing impact assessment and adaptation plan as necessary

Promoting Adaptation in Local Governments

1. Municipal Adaptation to the Impacts of Climate Change – Planning Guideline –

Step 7. Formulate Adaptation Plan

Case study: Tokushima Pref.

- **Identify roles and responsibilities** of the relevant departments and the measures.

Ex) Heatstroke prevention in health sector involves 4 departments:

- Environment
- Risk management
- Social welfare
- Education committee

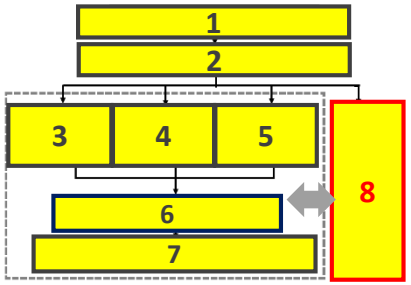
information dissemination

Raising awareness of heat stroke for elders	promote →				

Review the progress with the 4 departments

Promoting Adaptation in Local Governments

1. Municipal Adaptation to the Impacts of Climate Change – Planning Guideline –



Step 8. Share and provide information with community

■To spread adaptation:

- Hold **seminars** for community
- **Leaflets** informing local climate change and impacts, regional adaptation measures

Case study: Hyogo Pref.

Case study: Shiga Pref.

Contents of Japan's NAP

Chapters

III. Basic measures and international measures

i. Observation and Monitoring, Research and Studies

ii. Sharing and providing information related to climate risk

iii. Promotion of adaptation in region

1. Municipal Adaptation to the Impacts of Climate Change – Planning Guidelines –

2. Regional Adaptation Consortium

Promoting Adaptation in Local Governments

2. Regional Adaptation Consortium

- MOEJ- MAFF-MLIT partnership project.
- 2017-2019 three-year implementation period.
- Establishment of **Regional Adaptation Consortium** consisted of national and local governments, local research institutions etc.
- Main topics of study and discussion
  - Sharing experience and knowledge on adaptation among regional council members.
  - Implementation of **impact assessment** on the specific **needs of local governments**.
  - Discussion concrete adaptation measures based on scientific findings.

National steering committee

- composed of MOEJ, MAFF, MLIT and relevant research institutions.
- supported by Climate Change Adaptation Platform（NIES)

Coordination
Cooperation

Regional councils

- Promotion of formulation and implementation of concrete adaptation measures in region.
- Making use of scientific findings to “Second Climate Change Impact Assessment” which will be achieved by 2020.

AIM ASIA-PACIFIC INTEGRATED MODEL

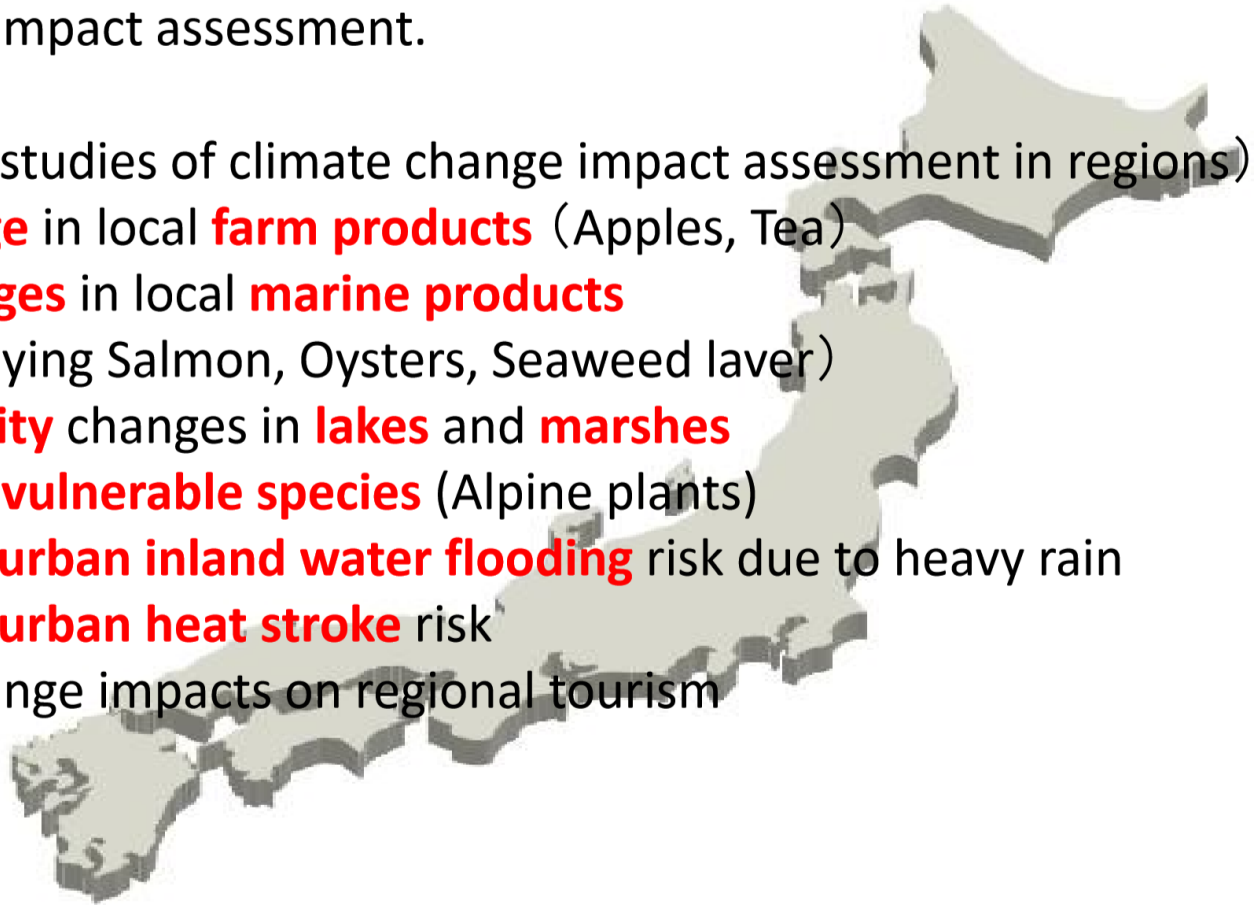
Promoting Adaptation in Local Governments

2. Regional Adaptation Consortium

Study topics were decided depending on local governments needs for climate change impact assessment.

（Examples of studies of climate change impact assessment in regions）

- **Yield change** in local **farm products**（Apples, Tea）
- **Catch changes** in local **marine products**
  （Japanese flying Salmon, Oysters, Seaweed laver）
- **Water quality** changes in **lakes** and **marshes**
- Impacts on **vulnerable species** (Alpine plants)
- Changes in **urban inland water flooding** risk due to heavy rain
- Changes in **urban heat stroke** risk
- Climate change impacts on regional tourism



Contents

International Cooperation

Chapters of NAP

III. Basic measures and international measures

i. Observation and Monitoring, Research and Studies

ii. Sharing and providing information related to climate risk

iii. Promotion of adaptation in region

iv. International measures

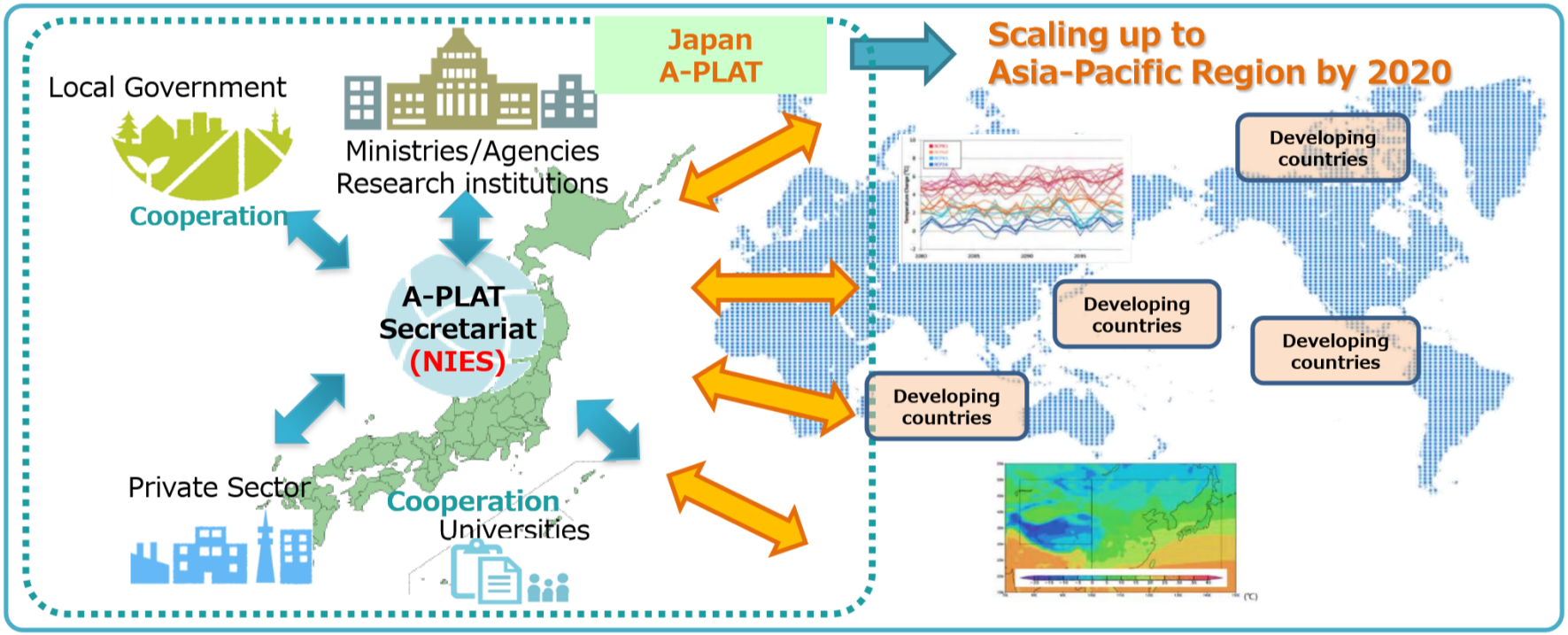
International Cooperation

- **Asia Pacific Adaptation Information Platform** will be established by 2020 to share **climate risk information** via online with research institutes/universities in both developing/developed countries.
- To support adaptation measures by providing advanced scientific climate risk information
- Japan will take a lead in the following activities under the Platform

①**Develop dataset** on **projection of climate change impacts** in the region through bilateral & intensive studies

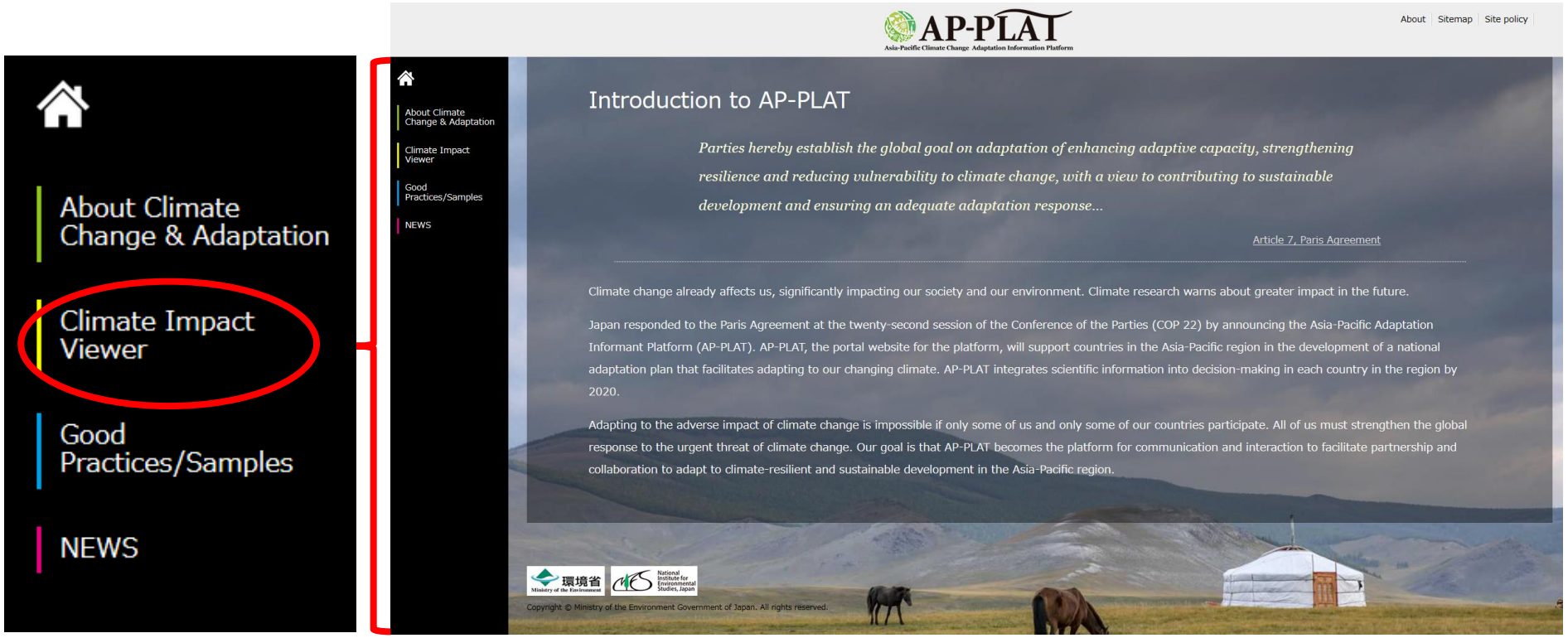
②**Develop supporting toolkits** for officials and stakeholders engaged in adaptation planning

③**Build capacity** on climate change **impact assessment/ adaptation planning**



AP-PLAT
Asia-Pacific Climate Change Adaptation Information Platform

A tentative version of the AP-PLAT for a demonstration at COP23



AIM
ASIA-PACIFIC INTEGRATED MODEL

AP-PLAT Asia-Pacific Climate Change Adaptation Information Platform CLIMATE IMPACT VIEWER

Ministry of the Environment | National Institute for Environmental Studies, Japan | Office for Coordination of Climate Change Observation

** The data presented here are for demonstration purposes only. **

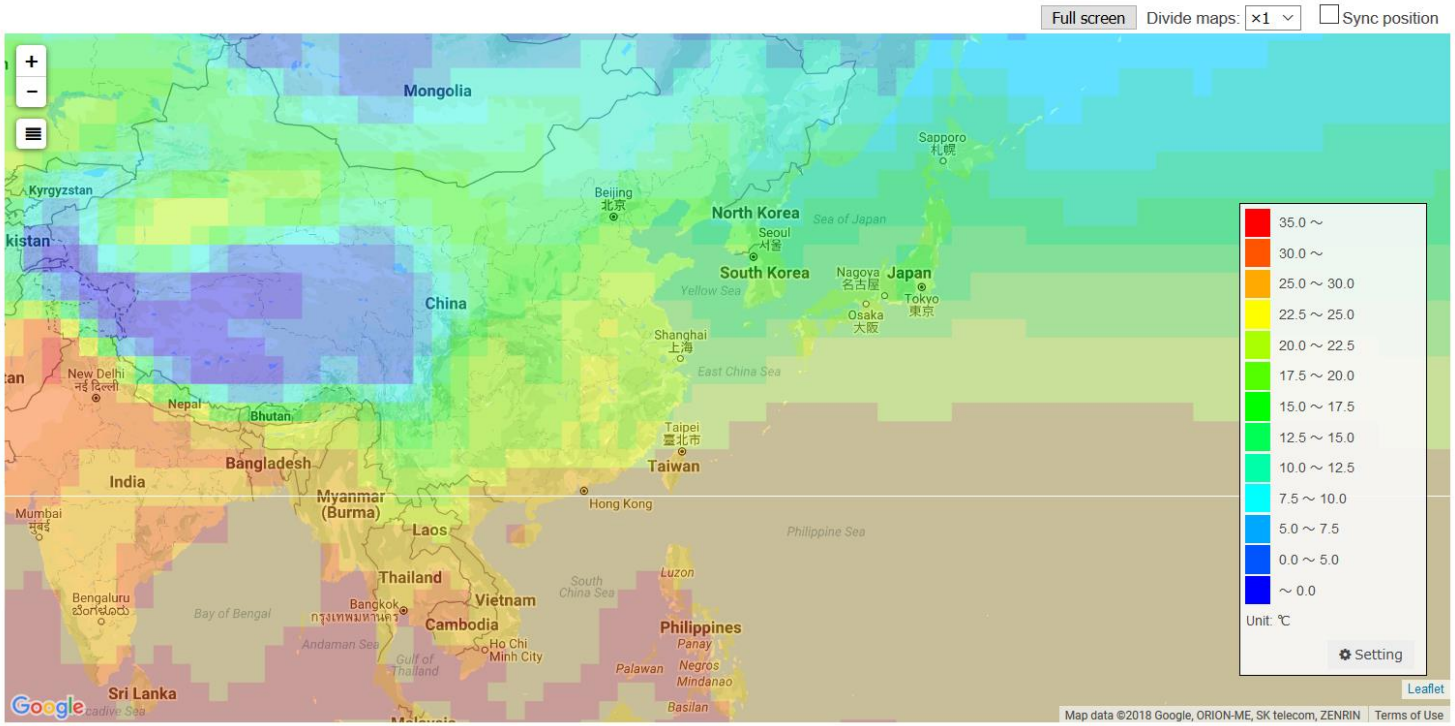
Map

Data

1. Category	Climate
2. Index	Temperature
3. Climate model	Model 1
4. Scenario	RCP8.5
5. Period	End of 21th century
6. Transparency	60 %

Background layers

1. Background	Google Maps



Annual mean temperature in the end of 21th century predicted by MIROC-ESM-CHEM which has been cooperatively developed by the University of Tokyo, NIES, and JAMSTEC with Representative Concentration Pathways 8.5 (RCP8.5)

AP-PLAT
Asia-Pacific Climate Change Adaptation Information Platform

AP-PLAT Asia-Pacific Climate Change Adaptation Information Platform CLIMATE IMPACT VIEWER

Ministry of the Environment | National Institute for Environmental Studies, Japan | Office for Coordination of Climate Change Observation

** The data presented here are for demonstration purposes only. **

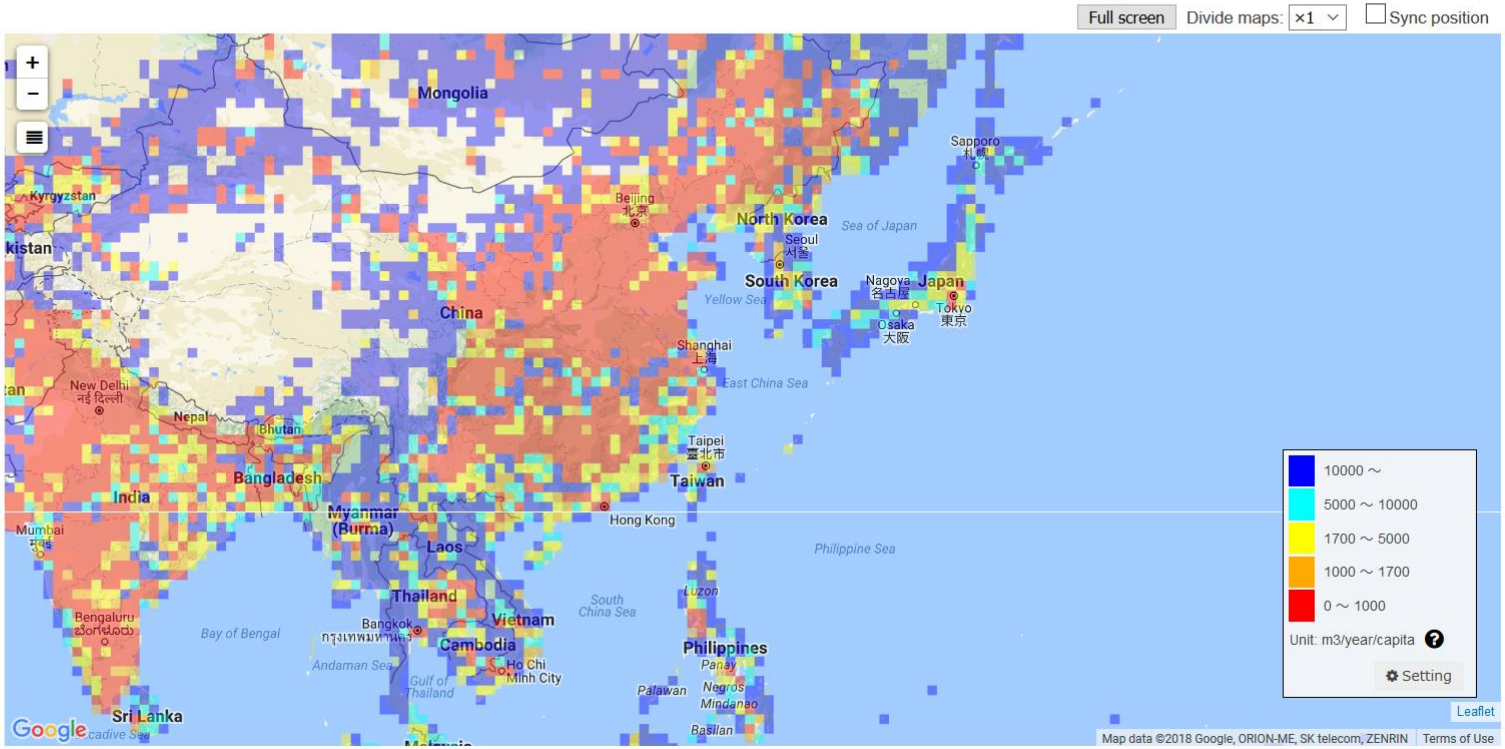
Map

Data

1. Category	Water resources
2. Index	Falkenmark Index
3. Climate model	Model 1
4. Scenario	RCP8.5
5. Period	End of 21th century
6. Transparency	60 %

Background layers

1. Background	Google Maps



Water-stressed population based on the Falkenmark indicator (water resources per capita: m^3/year/capita) in the end of 21th century used MIROC-ESM-CHEM climate prediction output with Representative Concentration Pathways 8.5 (RCP8.5)

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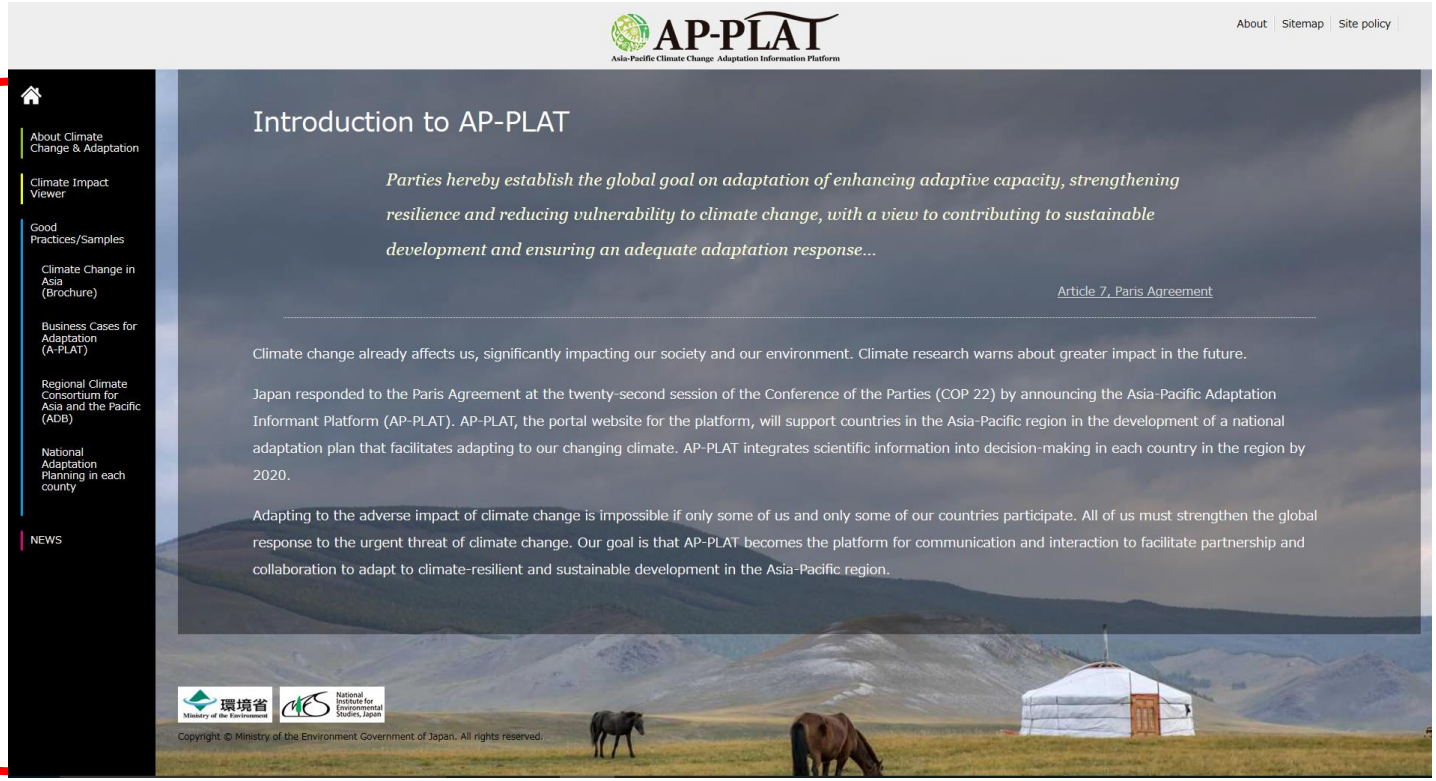
AP-PLAT
Asia-Pacific Climate Change Adaptation Information Platform

Good practice/samples
National Adaptation planning in each country



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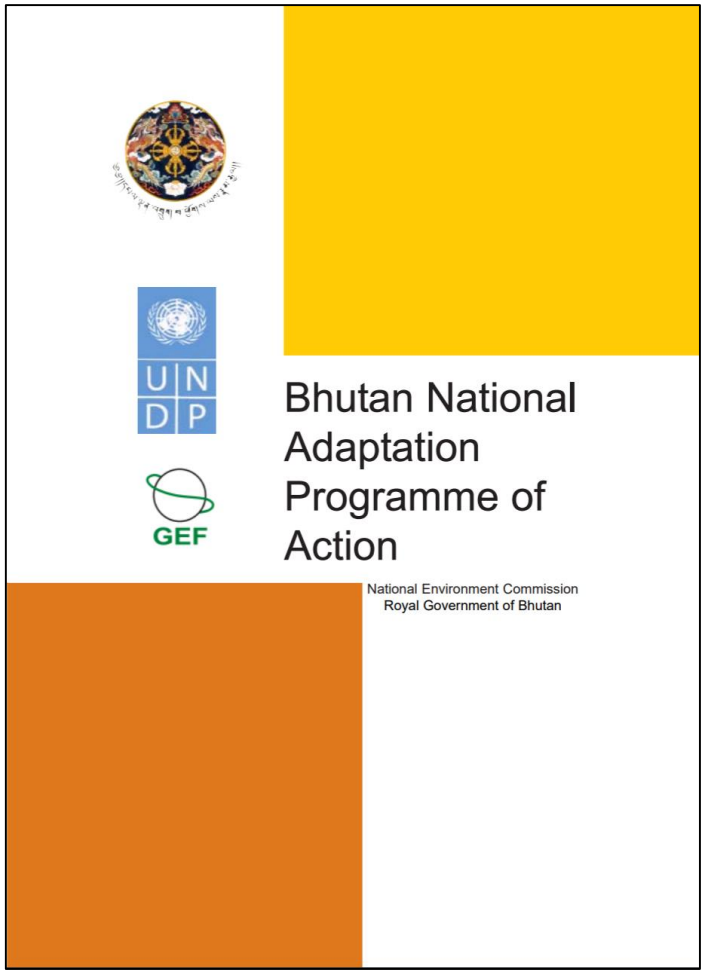
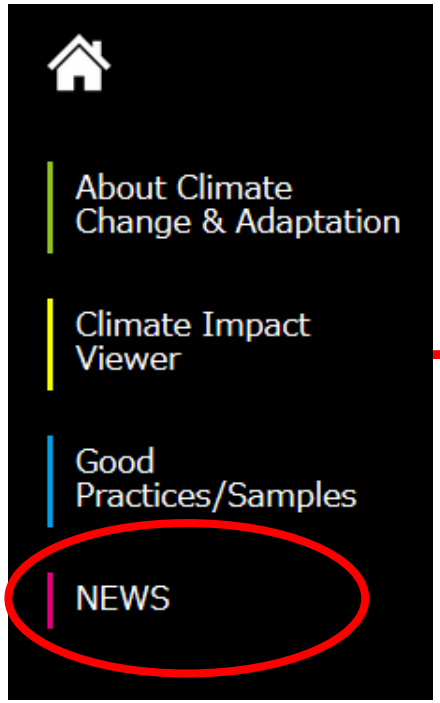
Good practice/samples
National Adaptation planning in each country

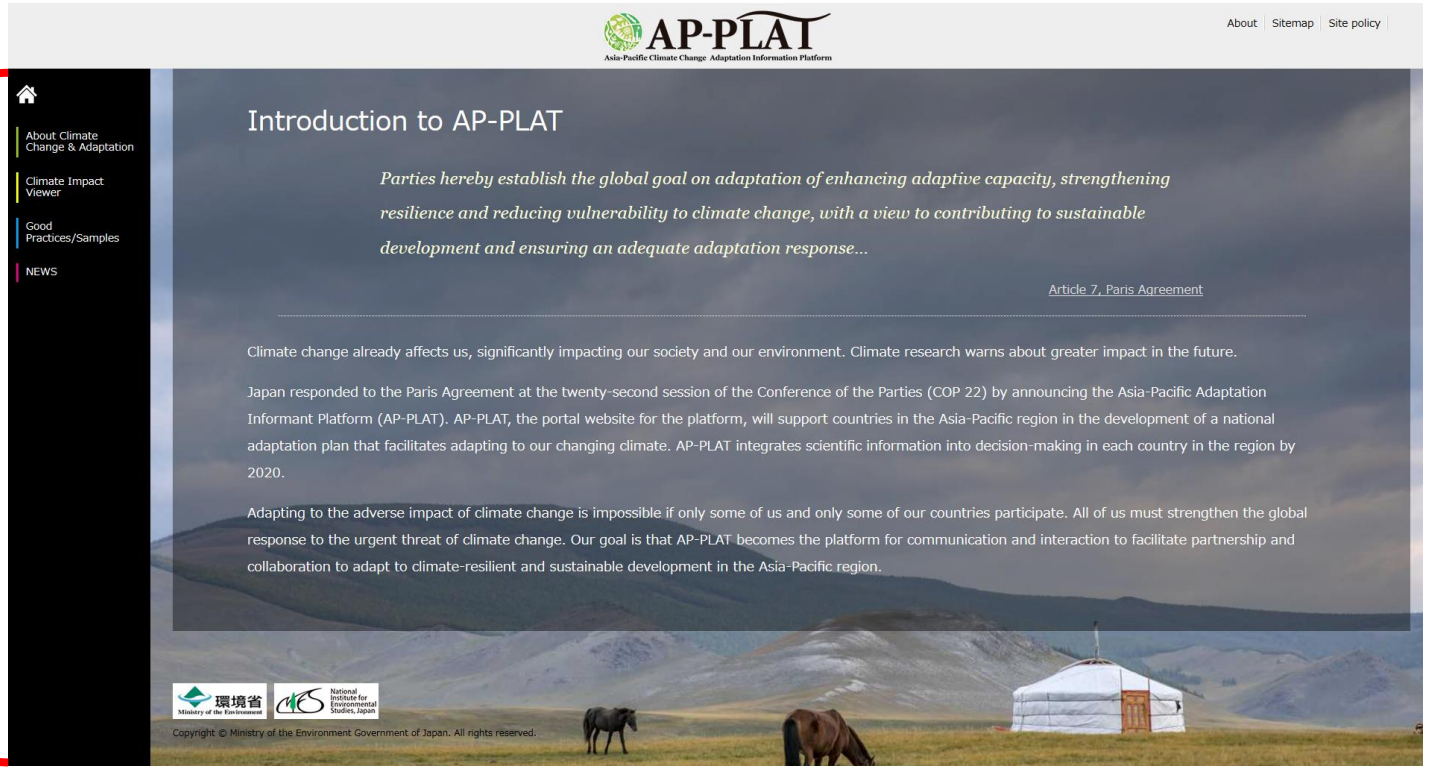
country	National Adaptation Plan	National Adaptation Programme of Action	National policy on adaptation
Afghanistan		• National Capacity Needs Self-Assessment for Global Environmental Management (NCSA) and National Adaptation Programme of Action for Climate Change (NAPA)	
Bangladesh		• National Adaptation Programme of Action	• Bangladesh Climate Change Strategy and Action Plan
Bhutan		• Bhutan National Adaptation Programme of Action	
Cambodia		• NATIONAL ADAPTATION PROGRAMME OF ACTION TO CLIMATE CHANGE	
India	• National Action Plan on Climate Change		
Indonesia	• NATIONAL ACTION PLAN FOR CLIMATE CHANGE ADAPTATION (RAN-API) • National Action Plan for Climate Change Adaptation (RAN-API)		• Indonesia Climate Change Sectoral Road Map
Japan	• National Plan for Adaptation to the Impacts of Climate Change		

☜ Click



AP-PLAT
Asia-Pacific Climate Change Adaptation Information Platform





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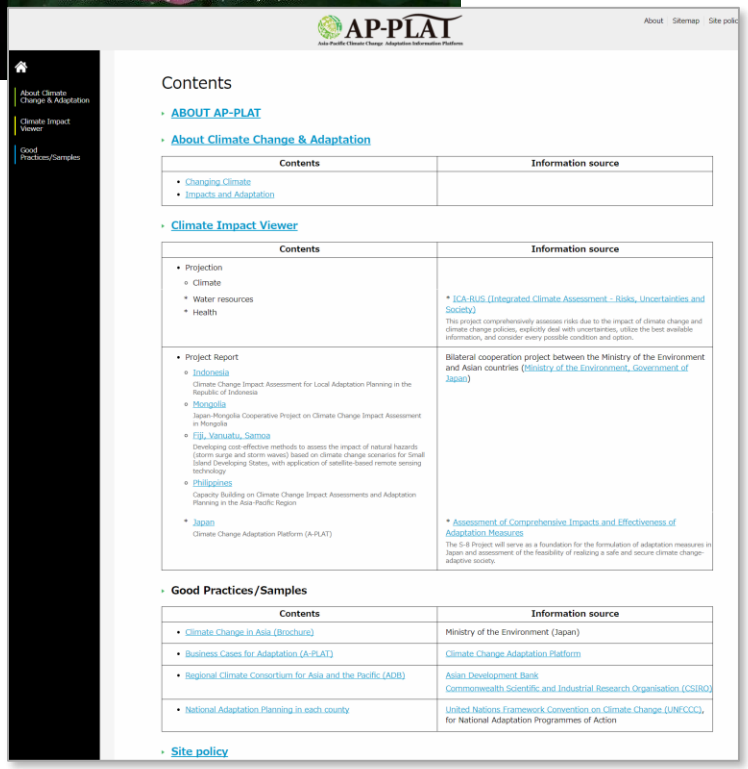
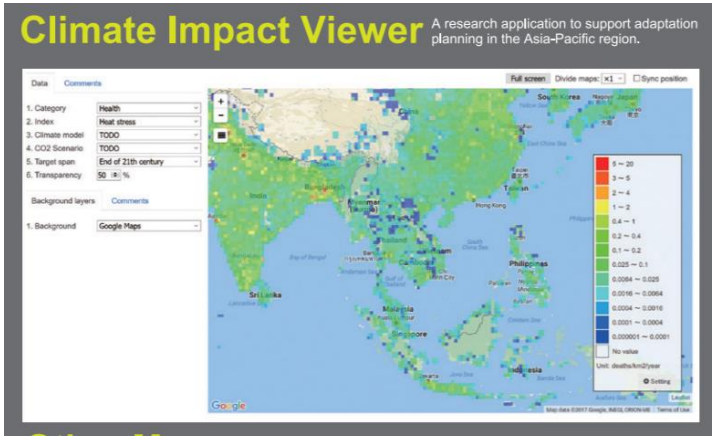
AP-PLAT





* S-10 data (heat stress & water resource) is currently available

MoEJ's Bilateral cooperation Report

AP-PLAT
Asia-Pacific Climate Change Adaptation Information Platform

- **Provide expertise and advice to countries, communities and companies on designing, financing, implementing and monitoring adaptation action**

GCEA (Global Centre of Excellence on Climate Adaptation)

UNEP

GLOBAL ADAPTATION NETWORK

apan asia pacific ADAPTATION NETWORK

AP PLAT

- **Develop** and run **dataset** on projection of climate change impacts
- **Develop** supporting **toolkits** (Downscaling, adaptation planning, impact assessment format, guideline, etc)
- **Enhance capacity** on climate change impact assessment/adaptation planning (multilateral, bilateral), GCF proposal

Adaptation knowledge exchange
- **Sustained Learning Exchange**
- **City-to-City exchange**
- **International Forum**

ADB

"Regional Climate Projections Consortium and Data Facility in Asia and the Pacific"

Bilateral Cooperation
- **CC Impact Assessment**
- **CC Adaptation Planning**
- **CC Capacity Building (technical, multilateral etc)**

CLICC Country Level Impacts of Climate Change

Develop methodology to assist countries to present climate change impact assessment in a consistent manner.

AIM ASIA-PACIFIC INTEGRATED MODEL

International Cooperation - GCECA

GCECA website

Activities

GCECA works across the different sectors and cross cutting issues to define and up-scale effective climate adaptation

- Mobilising and convening the global adaptation community - discussion briefs, workshops, webinars etc.
- Recognising and building excellence - mining projects for best practices and lessons learned, share tools, guidance, metrics etc.
- Promoting the uptake of adaptation excellence - capacity building, technical assistance by partners, connecting projects to resources and offering global outlooks and policy advice.

Mission

The Global Centre accelerates climate adaptation by recognizing, building and promoting excellence among all relevant stakeholder groups.

International Cooperation - GCECA

Side events at COP23

IISD REPORTING SERVICES

GCECA Bulletin

Global Centre of Excellence on Climate Adaptation

A publication of the International Institute for Sustainable Development

Friday, 10 November 2017 Vol. 172 No. 37

BRIEFING NOTE: WHAT IS EXCELLENCE IN CLIMATE ADAPTATION?: 9 NOVEMBER 2017

This event, organized by the Global Centre of Excellence on Climate Adaptation (GCECA), in partnership with the International Federation of Red Cross and Red Crescent Societies, convened on 9 November 2017 in Bonn, Germany, on the sidelines of the 23rd session of the Conference of the Parties to the UN Framework Convention on Climate Change. The event provided a forum to discuss how the GCECA, which will be officially launched on 14 November 20 to recognizing, building and promoting ex among relevant stakeholders worldwide.

Vivienne Parry, Genomics England, m Christiaan Wallet, GCECA, highlighted t Futures conference as the starting point fo the GCECA; observed that more than 20(consul pressir adapta that th in clim offices as in th Europe Nether Richt Enviro (SEI), of GC includ

Richard Klein, SEI

cutting themes, such as risk management also elaborated on the center's plans to pu briefs to promote dialogue on key adaptat stakeholders.

Barney Dickson, UN Environment, lau collaboration between his organization an in creating the GCECA and publishing th Gap Report.' He observed that while the 2 report focused on the gap in adaptation fi latest publication is on methodologies for progress.

Suada Ibrahim, Kenya Red Cross Society

Participants during the session

of local adaptation measures, she highlighted the provision of climate data that enables communities to adapt their crop planting cycles.

During a subsequent panel discussion, Julie Arrighi, Red Cross Red Crescent Climate Centre, highlighted the need to ensure that the most vulnerable people benefit from adaptation measures and are prioritized in an effective way.

Julie Arrighi, Red Cross Red Crescent Climate Centre

Angela Falconer, Climate Policy Initiative, pointed to its '2017 Global Landscape of Climate Finance' report and underscored the difficulty of robustly estimating the level of private adaptation finance.

Saleemul Huq, International Centre for Climate Change and Development (ICCCAD), qualified current discussions on adaptation as being focused on determining "value for money" and called for more attention on the people affected by climate impacts.

Nick Craven, International Union of Railways, elaborated on the concept of "graceful failure," which is the ability to maintain functionality when parts of a system breakdown, to illustrate how the railway sector adapts to impacts such as flooding events.

Nick Craven, International Union of Railways

Yasuko Kemeyama, National Institute for Environmental Studies, Japan, said time horizons play an important role in adaptation planning, pointing to differences between adapting to impacts taking place in the near future compared to slow-onset events materializing by mid-century.

During the ensuing discussion, questions were raised on: the role of local communities in sharing adaptation knowledge; the definition of "excellence in adaptation"; and the role of the insurance sector, which prompted a debate about the boundary between what constitutes adaptation compared to loss and damage.

Saleemul Huq, ICCCAD

Yasuko Kemeyama, National Institute for Environmental Studies, Japan

IISD REPORTING SERVICES

GCECA Bulletin

Global Centre of Excellence on Climate Adaptation

A publication of the International Institute for Sustainable Development

Wednesday, 15 November 2017 Vol. 172 No. 38

BRIEFING NOTE: LAUNCH OF THE GLOBAL CENTRE OF EXCELLENCE ON CLIMATE ADAPTATION: 14 NOVEMBER 2017

This high-level event convened on 14 November 2017, in Bonn, Germany, on the sidelines of the 23rd session of the Conference of the Parties (COP 23) to the UN Framework Convention on Climate Change (UNFCCC). The event was organized by the Government of the Netherlands with participants highlighting the need for knowledge sharing and analysis for effective climate adaptation.

Chairperson, GEF

tion and resilience; assist in addressing eeds through channelling the support of s into innovative approaches on the ground; e with the Sustainable Development Goals. CCC Secretariat's willingness to work with

and Chairperson, Global Environment the GCECA's work will be "absolutely enges for scaling up adaptation, including ledge is fragmented, context-specific and phasizing the need for mainstreaming ssed hope that the GCECA can assist the lience into all its portfolios.

cutive Director, UN Environment, said "all about water," noting that climate on lives through water-related events. for private sector support, particularly for the most vulnerable people. retary General, International Federation d Crescent Societies, stressed that people aptation, and that communities' coping ady being stretched by climate impacts. action and capacity building in vulnerable rships between the public sector, the private ty; addressing the credibility gap in public e commitments; and recognition of local actors. He emphasized that not all people

L-R: **Erik Solheim**, Executive Director, UN Environment; **Yasuaki Hijioka**, Director, National Institute for Environmental Studies, Japan; **Cora van Nieuwenhuizen**, Minister of Infrastructure and Water Management, the Netherlands; **Elhadj As Sy**, Secretary General, International Federation of Red Cross and Red Crescent Societies; and **Vivienne Parry**, Genomics England

are equally vulnerable to climate impacts, noting that women, people with disabilities, the elderly and children require more attention, in addition to those living in pockets of vulnerability.

Yasuaki Hijioka, Director, National Institute for Environmental Studies, Japan, reported on his country's climate adaptation policies and programmes, stressing that Japan has been a world leader in adaptation and is "going to the next stage" in supporting local governments in their own adaptation programmes.

Highlighting that the Netherlands is known for cooperation between the private sector, the public sector, and scientific and knowledge institutions, van Nieuwenhuizen called for similar cooperation in the work of the GCECA. Noting developments in international financial reporting standards, she noted the need to measure the effectiveness of adaptation in terms of financial results.

Josué Tanaka, Managing Director for Energy Efficiency and Climate Change, European Bank for Reconstruction and Development (EBRD), highlighted intersections between his work and that of the GCECA, including: the need to climate-proof his organization's projects by examining the potential implications of climate change on each new project; ongoing work to rebalance his organization's strategy towards adaptation; and efforts to develop metrics for adaptation.

Josué Tanaka, Managing Director for Energy Efficiency and Climate Change, EBRD

Matthias Garschagen, Institute for Environment and Human Security, United Nations University, called for sharing knowledge on, *inter alia*, climate risk insurance, how effective adaptation can be measured, and how the global stocktake can support effective adaptation.

Ton Schroor, Alderman, City of Groningen, the Netherlands, emphasized his city's commitment to hosting the GCECA, stating that his city is attempting to move away from natural gas.

David Jackson, UN Capital Development Fund, noted the need for private finance to enable cities to grow in an adaptive way, cautioning against lock-in of maladaptation in cities such as Houston.

Ton Schroor, Alderman, City of Groningen, the Netherlands

AIM ASIA-PACIFIC INTEGRATED MODEL

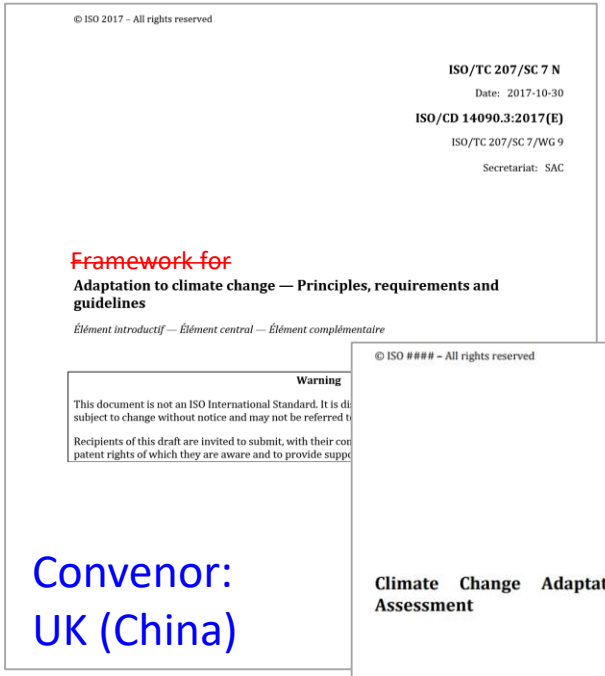
International Cooperation – ISO

ISO/TC 207 Environmental management
→ SC 07 Greenhouse gas management and related activities

14090: ~~Framework for~~ Adaptaion to climate change – Princilpes, requirement and guidlines

14091 : Climate Change Adaptation – guidance to ~~Vulnerability~~ Risk Assessment

14092: Adaptation to climate change – Requirement and guidance on adaptation planning for organization including local governments and communities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ISO/TC 207/SC 7 N
Date: 2017-10-30
ISO/CD 14090.3:2017(E)
ISO/TC 207/SC 7/WG 9
Secretariat: SAC

~~Framework for~~
Adaptation to climate change — Principles, requirements and guidelines

Élément introductif — Élément central — Élément complémentaire

Warning
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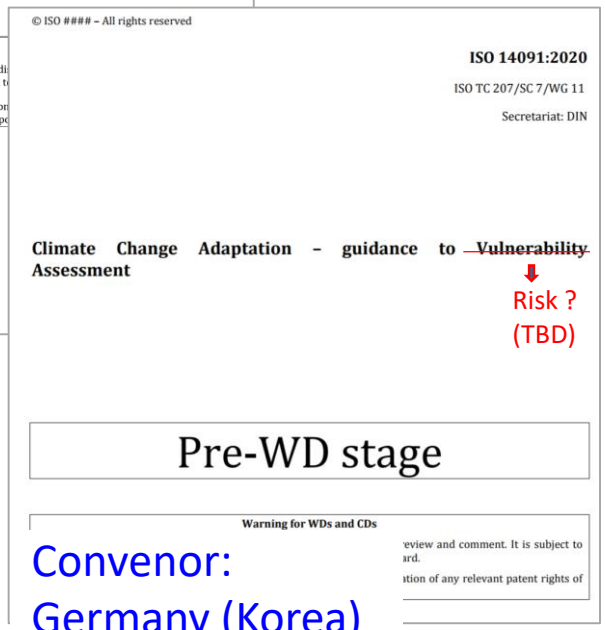
Recipients of this draft are invited to submit, with their cor
patent rights of which they are aware and to provide suppo

Convenor:
UK (China)

Under discussion
- Title
- AR4→AR5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ISO 14091:2020
ISO TC 207/SC 7/WG 11
Secretariat: DIN

Climate Change Adaptation – guidance to ~~Vulnerability~~ Assessment
⬇
Risk ?
(TBD)

Pre-WD stage

Warning for WDs and CDs
eview and comment. It is subject to
ard.
tion of any relevant patent rights of

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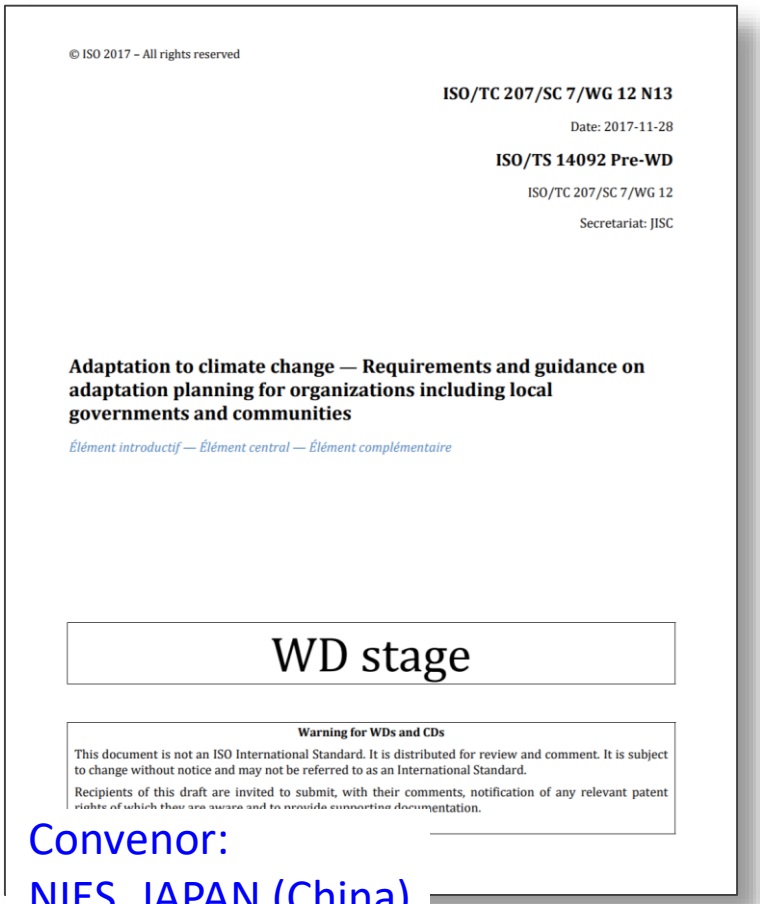
Germany (Korea)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ISO/TC 207/SC 7/WG 12 N13
Date: 2017-11-28
ISO/TS 14092 Pre-WD
ISO/TC 207/SC 7/WG 12
Secretariat: JISC

Adaptation to climate change — Requirements and guidance on adaptation planning for organizations including local governments and communities

Élément introductif — Élément central — Élément complémentaire

WD stage

Warning for WDs and CDs
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Convenor:
NIES, JAPAN (China)

AIM ASIA-PACIFIC INTEGRATED MODEL

Discussion on Bhutan National Adaptation Programme of Action

Topic 1: Collecting data

2.0 Framework for Adaptation programme

2.1 Climate – Current Situation (p.5)

Climate data and information on Bhutan is scanty, sparse and not well documented.

Question:

1. How did you collect the data and information in the past ?

2. How do you monitor (or plan to monitor) the climate?

Discussion on Bhutan National Adaptation Programme of Action

Topic 2: Objective of NAPA

2.0 Framework for Adaptation programme
2.5.2 Objective (p.11)

The objectives of the Bhutan NAPA are:
1. to identify urgent and immediate projects and activities that can help communities adapt to the adverse effects of climate change …

Question:

1. How do you identify the projects and activities?

2. What have you already found (if any)?

Discussion on Bhutan National Adaptation Programme of Action

Topic 3: Barriers

2.0 Framework for Adaptation programme
2.6 Potential Barriers to Implementation (p.13)

- *To adequately incorporate (and institutionalize) environmental criteria in the face of rapid development and urbanization*
- *Limited analytical capacity, especially for climate data to analyze threats, potential impacts and develop viable solutions*

Question:
What should be done to overcome these barriers?

Discussion on Bhutan National Adaptation Programme of Action

Topic 4: Adaptation

2.0 Identification of Key Adaptation Needs

- *In view of the historical information on climate related hazards, past adaptation to climate change and climate variability, …*

  Question:
  Have you taken projected climate / impacts into account to identify the adaptation needs?

Discussion on Bhutan National Adaptation Programme of Action

Topic 5: Ranking

5.0 List of Priority NAPA project
5.1 Ranking of Proposed Activities (p.25)

1	Disaster Management system	6	Rainwater Harvesting
2	Artificial Lowering of Thorthomi Lake	7	GLFO Hazard zoning
3	Weather forecast to save farmers	8	Installation of Early Warning system
4	Landslide Management	9	Promote Community-based forest fire management and prevention
5	Flood Protection		

Question:

1. What is needed to prioritize?
2. What are the difficulties?

AIM ASIA-PACIFIC INTEGRATED MODEL

ご清聴ありがとうございました

Thank you for your attention